



DOE-RFFO Environmental Restoration Program

Monthly Report
for July 1994



August 20, 1994

DOCUMENT CLASSIFICATION
REVIEW WAIVER PER
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EXECUTIVE SUMMARY

SIGNIFICANT ACTIVITIES AND ACHIEVEMENTS FOR JULY 1994

A notice, published in the *Denver Post* and the *Rocky Mountain News* on July 18, 1994, initiated the 30-day public review and comment period for the Operable Unit (OU) 1 Draft Proposed Action Memorandum for Accelerated Cleanup of hot spots. The review and comment period will close on August 17, 1994.

In OU 3, notification was provided to the Jefferson County Planning Department, the City of Westminster Planning Division, and a Private Property owner for the air and meteorological site development survey. A metes and bounds survey was begun on July 11, 1994, for the air and meteorological monitoring site developments and was completed on July 22, 1994. The survey report was provided to the Jefferson County Planning Department by July 29, 1994, as part of a site approval application. Construction of the monitoring station sites is expected to begin in August 1994.

Preliminary salt milling was completed in the OU 4 C Pond on July 15, 1994. Except for one area in the northeast corner of the pond, all of the salt has been milled. The sludge has been moved to the southeast corner of the pond.

Surficial soil sampling at OU 10 Individual Hazardous Substance Site (IHSS) 206 in the Protected Area was completed on July 21, 1994. This completes all surficial soil sampling for OU 10 as part of the nonintrusive sampling activities. Soil gas sampling locations in IHSSs 175 and 210 were completed on July 28, 1994. The soil gas rig will begin work on soil gas locations in OU 12.

The Draft Phase I RFI/RI Report for OU 15 was submitted to the regulatory agencies on July 25, 1994, in advance of the August 1, 1994, Interagency Agreement (IAG) milestone date.

Comments were received from the regulatory agencies on the Draft Record of Decision for OU 16. Efforts continue on the comment revisions.

All contracting issues associated with The Environmental Institute at Rocky Flats have been resolved. There will be a signing ceremony and picture session to officially announce the formation of the Institute. This ceremony will be held in the Office of the Manager, Building 115, on August 3, 1994, at 1:00 p.m.

The Tolling Agreement has been signed by the regulatory agencies and the DOE and effectively resolves the issue of any milestones that are missed in the Industrial Area (IA) OUs (8, 9, 10, 12, 13, and 14) between July 1994 and January 31, 1995. The regulatory agencies have agreed to not issue a Notice of Violation for any of the milestones listed in the Tolling Agreement, and the regulatory agencies have proposed a lump sum payment in lieu of penalties for any past or future missed IA milestones.

The regulatory agencies, the DOE, and EG&G attended a meeting on July 12, 1994, to present the environmental transport modeling methods and technologies currently in use for the OU Human Health and Risk Assessments. A general overview was presented for the Air and Vadose Zone, the Surface Water, and the Groundwater Modeling techniques.

A four-month milestone extension request for the IA Interim Measure/Interim Remedial Action Plan was submitted to the regulatory agencies, and a three-month extension was approved. A new schedule has been developed, and the schedule will allow the new milestones to be achieved. A contract modification is under development that will enable the subcontractor to continue work on the project.

LAG PERFORMANCE INDICATORS FOR MONTHLY REPORT

<u>Number of IAG Table Six Milestones to Date</u>	<u>(10/1/93 - 9/30/94)</u>	<u>Current FY94 Since IAG Inception</u>
Scheduled (including approved extensions)	20	117
Met	6	4
Extensions Granted	8	35
Extensions Denied	6	8
Remaining this FY94 (to 9/30/94)	15	n/a
Added	0	7
Deleted	1	4

<u>Deliverables In Review by Regulators</u>	<u>Project</u>	<u>Date Submitted</u>
	Revisions to OU 1 Phase III RFI/RI	15 Jun 94
	OU 2 Draft Phase II RFI/RI Report	16 Dec 93
	OU 4 Draft Proposed Phase I IM/IRA Decision Document	27 May 94
	OU 4 Draft Proposed Phase I RFI/RI Work Plan	27 May 94

<u>Field Work Currently Under Way</u>	<u>Project</u>	<u>Scheduled Complete</u>
Please note: these dates reflect scheduled field work and completed field work.	OU 2	08 Oct 93
	OU 3	13 Jul 93
	OU 4	Jun 95 ^a
	OU 5	Oct 94 ^a
	OU 6	30 Jun 94
	OU 8	28 Feb 95
	OU 9	Jun 95
	OU 10	15 Aug 94
	OU 12	05 Sep 94
	OU 13	06 10 96
	OU 14	25 Oct 96
	OU 15	24 June 94

^a for field work Phases I and II

<u>IM/IRA Status</u>	<u>Gallons Treated</u>
OU 1 881 Hillside Treatment	2,500,313 gallons
OU 2 903 Pad Water Treatment	24,764,083 gallons
OU 4 Water Management Tasks (Interceptor Trench System and Pond Water)	916,000 gallons

<u>IAG Document Deliverables Due Next Six Months</u>	<u>Due Date</u>	<u>Expected Date</u>	<u>Comments</u>
OU 1 Draft CMS/FS Report	25 Aug 94	25 Aug 94	
OU 1 Corrective Action Decision Work Plan	01 Nov 94	15 Feb 96	
OU 1 Draft Proposed Plan	22 Nov 94	07 Mar 95	
OU 1 Final CMS/FS Report	22 Nov 94	11 Nov 94	
OU 2 Final Proposed Plan	09 Aug 94	02 Jun 95	
OU 2 Draft Responsiveness Summary	13 Dec 94	26 Mar 97	
OU 3 Final Phase I RFI/RI Report	21 Oct 94	11 Jul 96	
OU 4 Final Phase I Proposed IM/IRA Decision Document	06 Aug 94	To be determined	In dispute resolution

<u>IAG Document Deliverables Due Next Six Months</u>	<u>Due Date</u>	<u>Expected Date</u>	<u>Comments</u>
OU 4 Final Phase II RFI/RI Work Plan	06 Aug 94	To be determined	Delayed/ comments pending
OU 4 All Solar Ponds Emptied of Water and Sludge	20 Jan 95	14 Dec 94	
OU 4 Submit IM/IRA Responsiveness Summary	25 Jan 95	To be determined	In dispute resolution
OU 6 Final Phase I RFI/RI Work Plan	18 Nov 94	28 Nov 95	
OU 7 Draft Phase I Proposed IM/IRA Decision Document	01 Nov 94 ³	03 May 95	
OU 7 Landfill Leachate Collection IM/IRA	14 Oct 94 ³	14 Oct 94	
OU 8 Final Phase I RFI/RI Report	12 Jul 94	26 Aug 03	
OU 9 Final Phase I RFI/RI Report	06 Sep 94	16 Sep 03 ⁴	
OU 10 Draft Phase I RFI/RI Report	25 Aug 94	02 Nov 15 ⁴	
OU 11 Draft Phase I RFI/RI	20 Sep 94 ³	20 Jul 95	
OU 12 Final Phase I RFI/RI Report	15 Sep 94	17 Nov 99 ⁴	
OU 13 Draft Phase I RFI/RI Report	08 Aug 94	24 Mar 99 ⁴	
OU 13 Final Phase I RFI/RI Report	11 Jan 95	02 Dec 99 ⁴	
OU 14 Draft Phase I RFI/RI Report	20 Dec 94	23 Apr 97	
OU 15 Final Phase I RFI/RI Report	23 Jan 95	04 Jan 95	
SW Industrial Area Draft Responsiveness Summary	Aug 94	10 Dec 94	
SW Industrial Area Final Responsiveness Summary	Aug 94	09 Jan 95	
SW Industrial Area Final Decision Document	23 Aug 94	09 Jan 95	

<u>Overdue Deliverables</u>	<u>Due Date</u>	<u>Expected Date</u>
OU 2 Draft Proposed Plan	10 May 94	27 Jan 97 ¹
OU 2 Final CMS/FS Report	10 May 94	27 Jan 97 ¹
OU 2 Draft Phase II RFI/RI Report ²	12 Mar 93	16 Dec 93 ¹
OU 2 Final Phase II RFI/RI Report	09 Aug 93	23 May 94 ¹
OU 2 Draft CMS/FS Report	04 Nov 93	17 Oct 96 ¹
OU 3 Draft Phase I RFI/RI Report	14 Feb 94	30 Oct 95 ¹
OU 5 Draft Phase I RFI/RI Report	30 Nov 93	09 Feb 95 ¹
OU 5 Final Phase I RFI/RI Report	03 May 94	14 Nov 95 ¹
OU 6 Draft Phase I RFI/RI Report	10 Jun 94	19 Apr 95 ¹
OU 7 Final Phase I RFI/RI Report	16 Mar 94	02 Sep 94 ¹
OU 8 Draft Phase I RFI/RI Report	14 Feb 94	15 Aug 02 ⁴
OU 9 Draft Phase I RFI/RI Report	11 Apr 94	20 Mar 01 ⁴
OU 12 Draft Phase I RFI/RI Report	20 Apr 94	11 Mar 99 ⁴

¹ Completion date to be rescheduled because of the Human Health Risk Assessment stop work order.

² Partial delivery because of the Human Health Risk Assessment stop work order.

³ Pending Revision per the process improvement proposals.

⁴ The Tolling Agreement resolves the issue of any milestones that are missed in OU 2 and the Industrial Area (IA) OUs (8, 9, 10, 12, 13, and 14) between July 1994 and January 31, 1995.

PROBLEMS AND PROGRAMMATIC ISSUES

In OU 1, an additional hot spot (881-18/19) in IHSS 119.1 was located and sampled by using a Field Instrument for the Detection of Low Energy Radiation and the Field Germanium Gamma Spectroscopy System. This hot spot is one of two (881-16/17 and 881-18/19) that were designated as hot spots during soil sampling in 1987 (General Laboratory, 881 Hillside, Surface Soil Sample Report, Samples 881-11 through 881-19). Since 1987, soil analysis had not indicated elevated concentrations of radionuclides in these regions. The additional field work was conducted to investigate these additional potential hot spots, and if detected, to begin removal activity planning. A Field Instrument for the Detection of Low Energy Radiation will be used to conduct additional soil surveys of the area, and a grid layout will be used to ensure the complete area around 881-16/17 is covered. All results will be thoroughly documented, and any elevated concentrations will be sampled by using the Field Germanium Gamma Spectroscopy System. If an additional hot spot is found, removal activity planning will begin immediately.

All OU 4 Interim Measure (IM) milestones have been affected by the current dispute resolution concerning the disposal of sludge. At a meeting of the regulatory agencies and the DOE to resolve the dispute, it was agreed that new milestones will be negotiated as part of the resolution.

A second OU 8 milestone, submittal of the Final Phase I RFI/RI Report, was missed on July 12, 1994.

In OU 10, the IHSS 129 tank removal action could be delayed because of the unresolved regulatory issues related to the disposition of the tank.

NEAR-TERM IAG TABLE SIX MILESTONES

<u>OU #</u>	<u>IAG Milestone Description</u>	<u>Date Scheduled to EPA/CDPHE</u>	<u>Status</u>
2	Submit Draft Phase II RFI/RI Report	12 Mar 93	Tolling Agreement ³
2	Submit Final Phase II RFI/RI Report	09 Aug 93	Tolling Agreement ³
2 ¹	Submit Draft CMS/FS Report	04 Nov 93	Extension request submitted. Past due
5 ¹	Submit Draft Phase I RFI/RI Report	30 Nov 93	Extension request submitted. Past due
3 ¹	Submit Draft Phase I RFI/RI Report	14 Feb 94	Extended from 16 Jul 93. Past due
8	Submit Draft Phase I RFI/RI Report	14 Feb 94	Tolling Agreement ³
9	Submit Draft Phase I RFI/RI Report	11 Apr 94	Extension request denied. Past due
12	Submit Draft Phase I RFI/RI Report	20 Apr 94	Tolling Agreement ³
5 ¹	Submit Final Phase I RFI/RI Report	03 May 94	Extension request submitted. Past due
2 ¹	Submit Final CMS/FS Report	10 May 94	Extension request submitted. Past due
2 ¹	Submit Draft Proposed Plan	10 May 94	Extension request submitted. Past due
4	Submit IM Design Work Plan	24 May 95	Deleted
9	Submit Draft Phase I Proposed IM/IRA Decision Document	01 May 95	Proposed elimination
10	Submit Draft Phase I Proposed IM/IRA Decision Document	26 May 95	Proposed elimination
14	Submit Final Phase I RFI/RI Report	23 May 95	29 Sep 97
6 ¹	Submit Draft Phase I RFI/RI Report	10 Jun 94	Extended from 04 Aug 93
4	Submit Final Phase II RFI/RI Work Plan	06 Aug 94	Delayed. Comments pending.
8	Submit Final Phase I RFI/RI Report	12 Jul 94	Tolling Agreement ³
SW	Submit Industrial Area Draft Responsiveness Summary	02 Aug 94	10 Dec 94
4	Submit Final Phase I Proposed IM/IRA Decision Document	06 Aug 94	Delayed because of dispute resolution
13	Submit Draft Phase I RFI/RI Report	08 Aug 94	24 Mar 99
2 ¹	Submit Final Proposed Plan	09 Aug 94	Extension request submitted
SW	Submit Industrial Area Final Responsiveness Summary	23 Aug 94	09 Jan 95
SW	Submit Industrial Area Final Decision Document	23 Aug 94	09 Jan 95
10	Submit Draft Phase I RFI/RI Report	25 Aug 94	Tolling Agreement ³
1	Submit Draft CMS/FS Report	25 Aug 94	Extended from 11 Feb 94
9	Submit Final Phase I RFI/RI Report	06 Sep 94	Extension request denied
12	Submit Final Phase I RFI/RI Report	15 Sep 94	Tolling Agreement ³
11	Submit Draft Phase I RFI/RI Report	20 Sep 94 ²	20 Jul 95
3 ¹	Submit Final Phase I RFI/RI Report	21 Oct 94	11 Jul 96
1	Submit Corrective Action Decision/ Record of Decision Work Plan	01 Nov 94	12 Sep 97
7	Submit Draft Phase I Proposed IM/IRA Decision Document	01 Nov 94 ²	03 May 95
6 ¹	Submit Final Phase I RFI/RI Report	18 Nov 94	Extended from 07 Jan 94
1	Submit Draft Proposed Plan	22 Nov 94	Extended from 27 Sep 93
1	Submit Final CMS/FS Report	22 Nov 94	Extended from 27 Sep 93
2 ¹	Submit Draft Responsiveness Summary	13 Dec 94	23 Sep 97
4	IM/IRA Responsiveness Summary	14 Dec 94	Delayed because of the dispute resolution
14	Submit Draft Phase I RFI/RI Report	20 Dec 94	23 Apr 97
15	Final Phase I RFI/RI Report	04 Jan 95	On schedule

<u>OU#</u>	<u>IAG Milestone Description</u>	<u>Date Scheduled to EPA/CDPHE</u>	<u>Status</u>
13	Final Phase I RFI/RI Report	11 Jan 95	02 Dec 99
4	All Solar Ponds Emptied of Water and Sludge	20 Jan 95	Ahead of schedule
10	Final Phase I RFI/RI Report	30 Jan 95	Tolling Agreement ³
4	Final Phase I IM/IRA Decision Document and Final Responsiveness Summary	24 Feb 95	Delayed because of the dispute resolution
11	Final Phase I RFI/RI Report	22 Feb 95	09 Sep 95
1	Submit Final Proposed Plan	24 Feb 95	Extended from 04 Jan 94
9	Submit Draft Phase II RFI/RI Work Plan	10 Mar 95	10 Sep 98
2	Submit Final Responsiveness Summary	16 Mar 95	05 Jan 98
2	Submit Draft CAD/ROD	16 Mar 95	05 Jan 98
7	Final Phase I Proposed IM/IRA Decision Document	06 Apr 95	03 Jul 95

¹OUS 2, 3, 5, and 6 will request additional extensions because of the Human Health Risk Assessment stop work order.

²Pending Revision per the process improvement proposals.

³The Tolling Agreement resolves the issue of any milestones that are missed in OU 2 and the Industrial Area (IA) OUs (8, 9, 10, 12, 13, and 14) between July 1994 and January 31, 1995.

SECTION I. INTRODUCTION

This monthly status report presents the current status and technical achievements of the Rocky Flats Environmental Restoration Program for July 1994. This program implements the Interagency Agreement (IAG) among the U.S. Department of Energy (DOE), the U.S. Environmental Protection Agency (EPA), and the State of Colorado to investigate, assess, and remediate, where necessary, contaminated areas at or adjacent to the DOE's Rocky Flats Environmental Technology Site near Golden, Colorado. This agreement was signed on January 22, 1991, and the work is being performed for the DOE by EG&G Rocky Flats, Inc.

The Executive Summary of the report highlights significant achievements, summarizes milestone information, and presents any major unresolved issues of the program. Technical progress, schedule status, and milestone status for each Operable Unit (OU) as well as other program activities are presented in Section 2. Section 3 contains the schedules for routine environmental sampling as required by Paragraph 210 of the IAG. Section 4 contains a list that identifies the subcontractors performing work on the program as required by Paragraph 13 of the IAG.

SECTION 2. PROJECT STATUS

2.1 OU 1 - 881 HILLSIDE AREA

The alluvial groundwater at the 881 Hillside Area, located north of Woman Creek in the southeast section of the Rocky Flats Environmental Technology Site, was contaminated in the 1960s and 1970s with solvents and radionuclides. The area is approximately two miles from the eastern, outer edge of the site's buffer zone at Indiana Street. The various Individual Hazardous Substance Sites (IHSSs) that make up OU 1 were being investigated and treated as high priority sites because of potentially elevated concentrations of organic compounds in the near-surface groundwater and the proximity of the contamination to a drainage system leading to an offsite drinking water supply. The selected Interim Remedial Action (IRA) at OU 1 involved construction of an underground drainage system called a French drain that intercepts and contains near-surface groundwater flowing from the OU 1 area. Water from a collection well in IHSS 119.1 and from the 881 Building footing drain along with the intercepted groundwater are collected. The water is treated at the 891 treatment facility, designed for this purpose, and released onsite into the South Interceptor Ditch along Woman Creek. Water collected from this ditch undergoes a secondary analysis prior to release. IRA construction was completed in April 1992. A Remedial Facilities Investigation (RFI)/Remedial Investigation (RI) Report was completed in November 1993. To determine the final remedial action, the Feasibility Study (FS) is continuing in parallel with the operation of the IRA.

2.1.1 OU 1 ASSESSMENT

Scope of Work Changes This Period None

Technical Approach Changes This Period None

IAG Milestone Accomplishments	Submit Draft Phase III RFI/RI Work Plan	06 Feb 90
	Submit Final Phase III RFI/RI Work Plan	31 Oct 90
	Submit Draft Phase III RFI/RI Report	28 Oct 92
	Submit Final Phase III RFI/RI Report	05 Nov 93
	Submit Revised Phase III RFI/RI Report	15 Jun 94

Future IAG Milestones Through FY95

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit Draft CMS/FS Report	25 Aug 94	25 Aug 94	25 Aug 94
Submit Final CMS/FS Report	22 Nov 94	22 Nov 94	22 Nov 94
Submit Draft Proposed Plan	27 Sep 93	22 Nov 94	07 Mar 95

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit Final Proposed Plan	04 Jan 94	24 Feb 95	02 Jun 95
Submit Draft Responsiveness Summary	23 Jun 95	23 Jun 95	01 Nov 95
Submit Final Responsiveness Summary	22 Sep 95	22 Sep 95	15 Feb 96
Submit Draft Corrective Action Decision/ Record of Decision	22 Sep 95	22 Sep 95	15 Feb 96
Submit Final Corrective Action Decision/ Record of Decision	22 Dec 95	22 Dec 95	29 Apr 96
Submit Draft Title II Design	05 Jul 95	11 Nov 96	

July Work Activity Status

Corrective Measures Study/Feasibility Study (CMS/FS) - The Draft CMS/FS will be delivered on August 25, 1994, to the regulatory agencies. An initial review of the draft was conducted by the DOE and EG&G on July 22, 1994. The comments made during this review are being incorporated into the document.

Accelerated Cleanup - A notice was published in the *Denver Post* and the *Rocky Mountain News* on July 18, 1994, initiating the 30-day public review and comment period for the Draft Proposed Action Memorandum. The review and comment period will close on August 17, 1994.

Technical Memoranda

Project

OU 1 - 881 Hillside

TM #10

TM Title

TM Status

Preliminary Remediation Goals

Submitted Final Technical Memorandum (TM) to the DOE: 03 May 94

When preparation was concluded or is estimated to be concluded: 03 May 94

Projected date of submittal to EPA/CDPHE: Submitted

Actual date of submittal: 03 May 94

Date when comments were received: EPA 01 Jun 94, CDPHE 26 Jul 94

TM #11

TM Title:

TM Status:

Alternative Array

Submitted Draft TM to the DOE: 03 May 94

When preparation is concluded or is estimated to be concluded: 03 May 94

Projected date of submittal to EPA/CDPHE: Submitted

Actual date of submittal: 03 May 94

Date when comments were received: EPA 24 May 94, CDPHE 06 Jun 94

Planned Work for August • Continue work on the Draft CMS/FS.

Problems

An additional hot spot (881-18/19) in Individual Hazardous Substance Site (IHSS) 119.1 was located and sampled by using a Field Instrument for the Detection of Low Energy Radiation and the Field Germanium Gamma Spectroscopy System. This hot spot is one of two (881-16/17 and 881-18/19) that were designated as hot spots during soil sampling in 1987 (General Laboratory, 881 Hillside, Surface Soil Sample Report, Samples 881-11 through 881-19). Since 1987, soil analysis had not indicated elevated concentrations of radionuclides in these regions. The additional field work was conducted to investigate these additional potential hot spots, and if detected, to begin removal activity planning. A Field Instrument for the Detection of Low Energy Radiation will be used to conduct additional soil surveys of the area, and a grid layout will be used to ensure the complete area around 881-16/17 is covered. All results will be thoroughly documented, and any elevated concentrations will be sampled using the Field Germanium Gamma Spectroscopy System. If an additional hot spot is found, removal activity planning will begin immediately.

Open Items

None

2.1.2 OU 1 REMEDIATION

Scope of Work Changes This Period

None

Technical Approach Changes This Period

None

IAG Milestone Accomplishments

Submit Draft Proposed IM/IRA Decision Document	18 Sep 89
Submit Proposed IM/IRA Decision Document	06 Oct 89
Submit Final IM/IRA Decision Document	05 Jan 90
Begin Phase I-A IM/IRA Construction	15 Jan 90
Restart Phase I-A IM/IRA Construction (after shutdown)	20 Jun 90

Begin Phase I-B IM/IRA Construction (ahead of schedule)	28 Sep 90
Submit IM/IRA Implementation Document	22 Feb 91
Begin Phase II-A IM/IRA Construction	01 Apr 91
Begin IM/IRA Testing	05 Aug 91
Begin Phase II-B IM/IRA Construction	03 Sep 91
Complete IM/IRA Construction (891 treatment building)	02 Mar 92
Complete IM/IRA Construction (French drain)	13 Apr 92

**Future IAG Milestones
Through FY95**

None

July Work Activity Status

Accelerated Cleanup - The DOE will respond to comments from the regulatory agencies on the Sampling and Analysis Plan and the Proposed Action Memorandum concurrently. The proposed language change to the IAG for accelerated actions requires the regulatory agencies to approve the Proposed Action Memorandum and the Sampling and Analysis Plan.

Interim Measure/Interim Remedial Action Treatment Facility - The UV/Peroxide systems that were upgraded on July 22, 1994, will prevent the ballasts from overheating in the drive enclosures.

Treated groundwater this month:	30,804 gallons
Total treated to date:	2,500,313 gallons

Planned Work for August

- Normal Operations

Problems

DOE continues to wait for a response from the regulatory agencies about the proposal to discontinue the collection of water from the Building 881 footing drain as part of the IM/IRA.

Open Items

None

2.2 OU 2 - 903 PAD, MOUND, AND EAST TRENCHES

The contamination at the 903 Pad and Mound Areas is largely attributed to the storage in the 1950s and 1960s of waste drums that corroded over time and allowed hazardous and radioactive material to leak into the surrounding soil. Additional contamination may have resulted from wind dispersion during drum removal and soil movement activities. The East Trenches Area was used for disposal of plutonium- and uranium-contaminated waste and sanitary sewage sludge from 1954 to 1968. Two areas adjacent to the trenches which were used for spray irrigation of sewage treatment plant effluent may have contaminants that were not removed by the treatment system.

Originally, the Interim Measure (IM)/IRA collected seep and surface water contamination sources, then treated and discharged the effluent to the surface water drainage. Operation of the field-scale treatability unit for the South Walnut Creek drainage began in May 1991. The effectiveness of the treatment process was evaluated at three locations: the influent to the treatment facility, several points within the facility, and the discharge point. Approval was granted to discontinue collection of two of the three sources because the water met the standards established. Collection of the last source is also being reevaluated.

A second IM/IRA was established in late 1991. This Subsurface IM/IRA Plan/Environmental Assessment encompasses the 903 Pad, the Mound Area, and the East Trenches Area of OU 2. This IM/IRA describes the process to evaluate a remediation technology for removal of residual free-phase volatile organic compound contamination at OU 2. The volatile organic compound removal actions involve *in situ* vacuum-enhanced vapor extraction technology. The interim remedial action will provide information to aid in the selection and design of final remedial actions that address subsurface, residual free-phase volatile organic compound contamination at OU 2.

2.2.1 OU 2 ASSESSMENT

Scope of Work Changes This Period	None
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Technical Approach Changes This Period	None
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IAG Milestone Accomplishments	Submit Draft Phase II RFI/RI Work Plan (Alluvial)	21 Dec 89
	Submit Final Phase II RFI/RI Work Plan (Alluvial)	12 Apr 90
	Submit Draft Phase II RFI/RI Work Plan (Bedrock)	05 Feb 91
	Submit Final Phase II RFI/RI Work Plan (Bedrock)	02 Jul 91
	Submit Field Report for Detailed Soil Vapor Survey	15 Dec 93

Submit Preliminary Draft Phase II RFI/RI Report 16 Dec 93

Future IAG Milestones Through FY95

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit Draft Phase II RFI/RI Report	12 Mar 93	Denied	30 May 95*
Submit Final Phase II RFI/RI Report	09 Aug 93	Denied	21 Sep 95*
Submit Draft CMS/FS Report	04 Nov 93		21 Oct 96*
Submit Final CMS/FS Report	10 May 94		19 Mar 97*
Submit Draft Proposed Plan	10 May 94		27 Jan 97*
Submit Final Proposed Plan	09 Aug 94		23 Apr 97*
Submit Draft Responsiveness Summary	13 Dec 94		23 Sep 97*
Submit Draft Corrective Action Decision/Record of Decision	16 Mar 95		05 Jan 98*
Submit Final Responsive Summary	16 Mar 95		05 Jan 98*
Submit Final Corrective Action Decision/Record of Decision	15 Jun 95		01 Apr 98*
Submit Corrective Action Decision/Record of Decision Work Plan	15 Jun 95		01 Apr 98*

* Completion date to be rescheduled because of the Human Health Risk Assessment stop work order.

July Work Activity Status

Remedial Assessment - The DOE has requested that the OU 2 Remedial Investigation schedule be revised and shortened to reflect a January 1995 delivery date of the Draft OU 2 RFI/RI Report. The schedule is being analyzed to determine if any logic ties, task durations, or scope can be changed to comply with the DOE's request for an earlier delivery date of the Draft RFI/RI Report. The DOE will receive the revised schedule by August 10, 1994.

The Draft Statement of Work for an Engineering Evaluation to identify potential areas of early remediation and a no further action within OU 2 is being reviewed. The revised Statement of Work for the OU 2 RFI/RI is in the review process and is scheduled to be delivered to Procurement in August 1994.

The Quarterly Report for the second quarter of 1994 for the OU 2 Field Treatability Unit is being prepared to submit to the regulatory agencies.

Treatability Study/Feasibility Study (FS) - A Safety Evaluation Screen was prepared for the Removal of Actinides from the Soil Treatability Study to be performed in Building 779. The Safety Evaluation Screen

concluded that there are no unaddressed significant fissile or nonradiological material safety hazards associated with these experimental activities, and an unresolved safety question determination evaluation is not required.

The soil supply for the Removal of Actinides from the Soil Treatability Study was received, dried, and homogenized for sampling. Approximately 17 kilograms of damp soil were received, and 16.5 kilograms of air-dried soil were produced for experimental use. The soil was not screened in the field because of the dust minimization requirements, and 5.5 kilograms of the soil measures more than 12.5 millimeters in mean diameter. The remaining 11 kilograms of soil contain a substantial amount of vegetative debris that must also be removed. This quantity of soil is insufficient to complete the series of treatability studies that have been planned, and the quantity of soil to be used in the preliminary dispersant soil washing evaluations will be reduced to make the best use of the soil supply that is available. An additional 5 kilograms of soil will be collected to supplement the soil supply for the experiments planned for Fiscal Year (FY)1995.

Magnetic Separation - The Los Alamos National Laboratory's investigators completed the second series of tests on the Rocky Flats Environmental Technology Site soil samples on July 15, 1994. Analytical samples have been prepared and shipped out for analyses.

Solvent Extraction - In preparation for bench-scale testing conducted July 18, 1994, the subcontractor completed installation of equipment. The Work Plan has been drafted, and comments are being included for final review.

Physical Separation - Analytical results from the first soil sampling and repack event have been received. To complete this task, the second soil sampling and repack event occurred July 20, 1994. The second event was necessary because the subcontractor shipped multiple bags that were unlabeled.

Technical Memoranda

Project

OU 2 - 903 Pad, Mound, and East Trenches

TM #5

TM Title

TM Status

Exposure Scenarios

When preparation is concluded or is estimated to be concluded: 15 Jan 93

Projected date of submittal to EPA/CDPHE: 15 Jan 93

Actual date of submittal: 15 Jan 93

Date comments were received: 11 Feb 93 EPA,
12 Mar 93 CDPHE

TM #6

TM Title

TM Status

Modeling

When preparation is concluded or is estimated to be concluded: 15 Jan 93

Projected date of submittal to EPA/CDPHE: 15 Jan 93

Actual date of submittal: 15 Jan 93

Date comments were received: 01 Apr 93 EPA,
31 Mar 93 CDPHE

TM #7

TM Title

TM Status

Surficial Soils

When preparation is concluded or is estimated to be concluded: 07 Jan 93

Projected date of submittal to EPA/CDPHE: 07 Jan 93

Actual date of submittal: 12 Jan 93

Date comments were received: 21 Jan 93

TM Approved

TM #8

TM Title

TM Status

Bedrock

When preparation is concluded or is estimated to be concluded: 15 Mar 93

Projected date of submittal to EPA/CDPHE: 01 Mar 93

Actual date of submittal: 15 Mar 93

Date comments were received: 14 Apr 93 EPA,
14 Apr 93 CDPHE

TM Approved

TM #8 Addendum

TM Title

TM Status

Contingency Plan for revised Phase II RFI/RI Work Plan
(Bedrock)

When preparation is concluded or is estimated to be concluded: Jun 93

Projected date of submittal to EPA/CDPHE: Jun 93

Actual date of submittal: Jun 93
Date comments were received: FY93

TM #9
TM Title
TM Status

Chemicals of Concern
When preparation is concluded or is estimate to be
concluded: 24 Aug 93
Projected date of submittal to EPA/CDPHE: Unknown
due to work stoppage
Actual date of submittal: 08 Dec 93
Date comments were received: 14 Jan 94
Projected date of resubmittal to EPA/CDPHE: 16 Sep 94

TM #10
TM Title
TM Status

Toxicity Assessment
When preparation is concluded or is estimated to be
concluded: 24 Aug 93
Projected date of submittal to EPA/CDPHE: 16 Sep 94
Actual date of submittal: To be determined
Date comments are received: To be determined

Planned Work for August

- Continue work on the Risk Assessment, the Treatability Studies, and the FS.

Problems

None

Open Items

None

2.2.2 OU 2 REMEDIATION

Scope of Work Changes
This Period

None

Technical Approach
Changes This Period

None

IAG Milestone
Accomplishments

Submit Draft Proposed IM/IRA Decision Document	19 Jun 90
Submit Proposed Plan IM/IRA Decision Document	18 Sep 90
Submit Draft Responsiveness Summary	13 Dec 90
Submit Final Responsiveness Summary and Final IM/IRA Decision Document	11 Jan 91

Field Treatability Test System Installation Complete	10 May 91
Begin Field Treatability Testing (Carbon System)	03 May 91
Submit Draft Treatability Test Report (Phase I Granular Activated Carbon)	01 Apr 92
Complete IM/IRA Construction (radionuclides removal system)	24 Apr 92
Begin Field Treatability Testing (radionuclides removal system)	27 Apr 92
Submit Final Treatability Test Report (Phase I Granular Activated Carbon)	02 Jun 92
Submit Subsurface Site I Draft Test Plan	29 Oct 92
Submit Subsurface Site I Final Test Plan	12 Jan 93
Submit Draft Surface Water Field Treatability Report	13 Jul 93
Submit Subsurface Site 2 Draft Test Plan	06 July 94
Submit Final Phase II Treatability Study Report	26 Jan 94
Begin Subsurface IM/IRA Test I	14 Feb 94

Future IAG Milestone Through FY95

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit Final Pilot Test Report Site I	27 Oct 94		08 Nov 94
Submit Draft final Pilot Test Report	28 Oct 94		28 Oct 94
Submit Final Pilot Test Report	20 Dec 94		20 Dec 94
Submit Final Pilot Test Report Site II	01 Sep 95		01 Sep 95
Submit Final Pilot Test Report Site III	23 Apr 96		23 Apr 96

July Work Activity Status

Subsurface Interim Measure/Interim Remedial Action Operations Report - Test Site No. 1 - Extraction wells AV1 and AI1 are yielding an average air flow of 40 standard cubic feet per minute. Extracted subsurface gas contains Volatile Organic Compounds at an average concentration of 718 parts per million volume/volume (ppmv/v) for a Volatile Organic Compounds extraction rate of 0.77 pounds per hour. Hours of operation to date total 103.8 hours. During post pilot operations, a total of 71.4 pounds of Volatile Organic Compounds has been removed. Groundwater is not being removed by the dual phase extraction system.

Preparation of the Implementation and Operation Plan or installation of gas monitor probes is under way for gas probe installation in the interior of the (IHSS) 110. Document modification requests for review and comment of the modified Implementation and Operation Plan are being prepared. The target date for installation of the gas monitoring probes is August 8, 1994.

Test Site No. 2 - Design of the off gas treatment system to treat the increased contaminant loading anticipated in the off-gas at Test Site No. 2 has begun. The system, as outlined in TM #2, will consist of a condenser, a thermal oxidation unit, an air stripper, and a high efficiency particulate air filter.

There is currently no laboratory in place for geotechnical analyses of core samples. The results from the analyses of core samples will be used on the Soil Vapor Extraction Test Site No. 2 to verify the six-phase heating system designs.

Test Site No. 3 - To meet the schedule for the OU 2 FS, Test Site No. 3, which is required under the Subsurface IM/IRA Pilot Test Program, will be performed concurrently with Test Site No. 2. The Soil Vapor Extraction is currently in the preliminary planning stages for Test Site No. 3. The initial plans require the utilization of the existing Soil Vapor Extraction system and the OU 2 documentation with Document Modification Requests to make the necessary changes. The schedule will be accelerated, and a work package will be established to perform the implementation and operation of the test.

Field Treatment Unit Surface Water Treatment Facility - A new double-walled tank is being procured for collection of Surface Water location SW-59 during the night, weekends, and holidays. The tank will be placed adjacent to the seep and will eliminate contaminated water from being pumped through the influent transfer line during unsupervised times. This new system will be equipped with an auto-dialer, which will transmit a prerecorded message to the Shift Superintendent in the event of a pump failure or leak

Split sampling was performed on July 21, 1994. Final treated effluent was sampled, and when available, data will be compared.

The new data from the geophysical logs of the monitor wells are now being incorporated into the subsurface structural map of the Rocky Flats Environmental Technology Site. The sitewide alluvial isopach, the upper hydrostratigraphic unit isopach, the top of the bedrock, and the base of the weathered bedrock maps, which are to be incorporated into the updated Geologic Characterization Report, are currently being modified and edited.

Treated surface water this month: 13,023 gallons
Total treated to date: 24,764,083 gallons

Planned Work for August • Continue Normal Operations

Problems None

Open Items None

2.3 OU 3 - OFFSITE AREAS

OU 3 can be divided into two categories based on two main activities. The IAG directs activities according to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). Compliance involves assessment of contamination in offsite areas also referred to as Contamination of the Land Surface (IHSS 199), Great Western Reservoir (IHSS 200), Standley Lake (IHSS 201), and Mower Reservoir (IHSS 202). The second category responds to a 1985 out-of-court lawsuit settlement, McKay vs. U.S., which directed that the surface soil contamination be remediated. Remedial activities in compliance with the Settlement Agreement (deep disc plowing) began in 1985. The disturbance resulting from remediation is being revegetated with mediocre success. The overall schedule for this activity is determined by the year-to-year success of the revegetation effort and requirements of the landowners.

**Scope of Work Change
This Period** None

**Technical Approach
Changes This Period** None

IAG Milestone Accomplishments	Submit Draft Past Remedy Report	26 Oct 90
	Submit Draft Historical Information/ Preliminary Health Risk Assessment Report	09 Nov 90
	Submit Final Past Remedy Report	02 Apr 91
	Submit Final Historical Information/ Preliminary Health Risk Assessment Report	16 Apr 91
	Submit Draft Phase I RFI/RI Work Plan	10 Jul 91
	Submit Final Phase I RFI/RI Work Plan	06 Dec 91

Future IAG Milestone Through FY95

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit Draft Phase I RFI/RI Report	16 Jul 93	14 Feb 94	14 Feb 94*
Submit Final Phase I RFI/RI Report	21 Oct 94		11 Jul 96*

* Completion date to be rescheduled because of the Human Health Risk Assessment stop work order.

**July Work Activity
Status** Notification was provided to the Jefferson County Planning Department, the City of Westminster Planning Division, and a private property owner for the air and meteorological site development survey. A metes and bounds survey was begun on July 11, 1994, for the air and meteorological monitoring site developments and

was completed on July 22, 1994. The survey report was provided to the Jefferson County Planning Department by July 29, 1994, as part of a site approval application. Construction of the monitoring station sites is expected to begin in August 1994.

The EPA, the DOE, and EG&G attended a meeting on July 12, 1994, to present environmental transport modeling methods and technologies currently in use for the OU Human Health and Risk Assessments. A general overview was presented for Air and Vadose Zone, Surface Water, and Groundwater modeling techniques.

To verify the initial analytical results, arrangements are being made to re-analyze certain OU 3 surface soil samples, previously collected for laboratory analyses of radionuclides. These soil samples had analytical results that were rejected during validation.

Surface soil samples were collected at the two proposed boundary monitoring well sites located east of Indiana street. The samples were collected for radionuclide analysis to determine the ambient plutonium concentration at each well location. Surface casing was installed to a depth of approximately 2 feet at the two boundary well sites. The casing was installed to prevent potentially contaminated surface soil from entering the borehole during completion of the wells. Based on the soil analytical results, the monitoring wells were installed in July 1994.

The Contaminants of Concern screening and contamination of nature and extent evaluation that used the regulatory agencies' finalized Risk Assessment methodology have been completed for each OU 3 IHSS.

An investigation into the potential for the polychlorinated biphenyl contamination from OU 6 (A and B Series Ponds) to impact Great Western Reservoir sediments continues. A cost estimate was prepared to collect deep sediment core samples from the Great Western Reservoir for laboratory analyses of polychlorinated biphenyls.

The Semi-Annual (Summer 1994) Jefferson County Remedy Acreage Report has been finalized.

Technical Memoranda

Project

OU 3 - Offsite Areas

TM #1

TM Title

TM Status

Field Changes to RFI/RI Work Plan

When preparation is concluded or is estimated to be concluded: 10 May 93

Projected date of submittal to EPA/CDPHE: 10 May 93

Actual date of submittal: 23 Apr 93

Date comments were received: 05 Jan 94

TM #2

TM Title

TM Status

Exposure Scenarios for the Human Health Risk Assessment

When preparation is concluded or is estimated to be concluded: 12 May 93

Projected date of submittal to EPA/CDPHE: 12 May 93

Actual date of submittal: 03 May 93

Date comments were received: 15 Jul 93

TM #3

TM Title

TM Status

Modeling

When preparation is concluded or is estimated to be concluded: Sep 94

Projected date of submittal to EPA/CDPHE: Sep 94

Actual date of submittal: To be determined

Date comments were received: To be determined

TM #4

TM Title

TM Status

Contaminants of Concern

When preparation is concluded or is estimated to be concluded: Aug 94

Projected date of submittal to EPA/CDPHE: Aug 94

Actual date of submittal: To be determined

Date comments were received: To be determined

Currently under a work stoppage

TM #5

TM Title

TM Status

Toxicity

When preparation is concluded or is estimated to be concluded: Aug 94

Projected date of submittal to EPA/CDPHE: Aug 94

Actual date of submittal: To be determined

Date when comments were received: To be determined

Currently under a work stoppage

Planned Work For August

- Continue air meteorological monitoring station construction.
- Review the TM #4, *Contaminants of Concern*.
- Review the CDPHE Conservative Screen letter Report.
- Continue the development of TM #5.
- Continue the Wind Tunnel sample analysis.

Problems

None

Open Items

The post stop work order schedule extension request for OU 3 has not been fully accepted by the regulatory agencies.

2.4 OU 4 - SOLAR EVAPORATION PONDS

OU 4 is comprised of five solar evaporation ponds: 207A, 207B series (north, center, south), and 207C, which were constructed for treatment and storage of process water from industrial operations. The process water contained treated acidic wastes, industrial liquid wastes (e.g., metal plating solutions), and low-level radioactive wastes.

As technology improved through the early 1960s and 1970s, the ponds were relined with various upgraded materials. However, leakage from the ponds into the soil and groundwater was suspected. Interceptor trenches were installed in 1971 to collect and recycle contaminated groundwater to the ponds and to minimize natural seepage and pond leakage from entering North Walnut Creek. In 1981, these trenches were upgraded by the current, larger Interceptor Trench System, which returned approximately 4 million gallons of groundwater back into the solar evaporation ponds each year.

Process water has not been pumped into the ponds since 1986, and with the diversion of the Interceptor Trench System water to storage tanks in April 1993, groundwater is no longer returned to the ponds. A new, dedicated Building 910 evaporation-treatment facility became operational in July 1993. This building supplements the site's waste treatment facility in Building 374 to process the water stored in the modular tanks.

The Solar Evaporation Ponds Subproject is comprised of four technical areas: (1) remix of noncertified pondcrete and saltcrete and pond sludge processing as required by the Federal Facilities Compliance Act; (2) water management/treatment by means of the IM/IRA Decision Document signed by the EPA, the CDPHE, and the DOE; (3) the OU 4 assessment and remedial action, per the IAG which identified the ponds as one of the 16 OUs to be remediated at the Rocky Flats Environmental Technology Site and superseded the 1988 Ponds-Closure Plan submitted by the DOE to the regulators; and (4) pad operations, storage, and disposal activities that are necessary to meet the site's RCRA interim status and permit requirements for storage of pond wastes. The water and pond sludge management are necessary precursors to OU 4 assessment and remediation, and pad operations are necessary support activities at least until the noncertified pondcrete is processed and disposed.

Work in these four areas was planned to close the ponds and remediate OU 4. The work was scoped to (1) remove water from the ponds, (2) provide a treatment facility to replace the ponds as evaporation-treatment and storage units for pond-related contaminated groundwater, (3) remove and dispose of pond wastes in compliance with all applicable regulations such as RCRA, (4) assess the nature and extent of contamination at the ponds, (5) complete a RCRA closure of the impoundments, (6) remediate the ponds (source and soils) as needed, and (7) remediate the groundwater as needed.

2.4.1 OU 4 ASSESSMENT

Scope of Work	None
Changes This Period	

Technical Approach None
Changes This Period

IAG Milestone Accomplishments	Submit Draft Phase I RFI/RI Work Plan	08 Jun 90
	Submit Final Phase I RFI/RI Work Plan	26 Nov 90
	Submit Draft Phase II RFI/RI Work Plan	27 May 94

**Future IAG Milestones
Through FY95**

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit Draft Phase I RFI/RI Report	21 May 93	Deleted	Deleted
Submit Final Phase I RFI/RI Report	18 Oct 93	Deleted	Deleted
Submit Final Phase II RFI/RI Work Plan	19 Sep 94	06 Aug 94	To be determined

July Work Activity Status The RCRA/CERCLA investigation field work will continue through the approval of a Record of Decision and the subsequent construction of the final corrective remedial action in FY00 (if required). Further assessment/characterization under the remaining two ponds (207B South and 207C) will not be known until samples are available. Sample collection continues to be delayed by the regulatory agencies granting a Part A Permit to the tanks destined to receive pond contents. The contents must be removed to allow sampling under the ponds. Review and comment of the Draft Phase II RFI/RI Work Plan and Draft Phase I IM/IRA Decision Document continued by the regulatory agencies.

Technical Memoranda

Project OU 4 - Solar Evaporation Ponds

TM #1	Vadose Zone Investigation
TM Title	Draft submitted to EPA/CDPHE: 16 Nov 92
TM Status	Comments received: 30 Nov 92
	Conditional Approval: 30 Nov 92
	Projected submittal of Final to EPA/CDPHE: 15 Dec 92
	Actual submittal date of Final: 15 Dec 92
	Submittal of TM #1 Vadose Zone Schedule: 19 May 93
	EPA/CDPHE final approval of TM #1: 17 Jun 93

TM #2
TM Title
TM Status

Modification to Field Activities
Draft submitted to EPA/CDPHE: 18 Mar 93
Comments received: 07 May 93
Projected submittal of Final to EPA/CDPHE: 07 Jun 93
Actual submittal date of Final: 09 Jun 93
EPA/CDPHE final approval of TM #2: 30 Jun 93

TM #3
TM Title
TM Status

Environmental Evaluation
Draft submitted to EPA/CDPHE: 19 Mar 93
Comments received: EPA 21 Apr 93
CDPHE 02 Jun 93
Projected submittal of Final to EPA/CDPHE: 30 Apr 93
Actual submittal date of Final: 02 Jul 93
EPA/CDPHE final approval of TM #3: 30 Jul 93

TM #4
TM Title
TM Status

Human Health Risk Assessment Exposure Scenarios
Draft submitted to EPA/CDPHE: 19 Mar 93
Comments received: EPA 21 Apr 93, CDPHE 23 Apr 93
Projected submittal of Final to EPA/CDPHE: 11 Jun 93
Actual submittal date of Final: 11 Jun 93
EPA/CDPHE final approval of TM #4: 25 Jun 93

Planned Work for August

- Incorporate and/or resolve the comments from the regulatory agencies on the Draft Final Phase II RFI/RI Work Plan.
- Continue efforts to streamline the Phase II assessment and remediation schedule.

Problems

The August 6, 1994, IAG delivery date for the submittal of the Final Phase II RFI/RI Work Plan will not be met because comments from the EPA have not been received as scheduled.

Open Items

None

2.4.2 OU 4 REMEDIATION

Scope of Work Changes This Period None

Technical Approach Changes This Period None

IAG Milestone Accomplishments The first IAG remediation milestone for this OU is the Draft Phase I Proposed IM/IRA Decision Document that was delivered to the regulatory agencies on May 27, 1994.

Future IAG Milestones Through FY95

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit Final Phase I Proposed IM/IRA Decision Document	12 Sep 94	06 Aug 94*	To be determined*
All Solar Ponds Emptied of Water and Sludge	new	20 Jan 95	12 Oct 94
Submit IM/IRA Responsiveness Summary	25 Jan 95	14 Dec 94*	To be determined*
Submit Final Phase I IM/IRA Decision Document and Final Responsiveness Summary	24 Jan 95	25 Feb 95*	To be determined*
Submit IM Title II Design	24 Jun 96	10 Feb 95*	To be determined*
Begin Phase I IM/IRA Construction	28 Jan 97	27 Sep 95	To be determined*

* Delayed because of the initiation of dispute

July Work Activity Status Treatment, Storage, and Disposal
Conceptual Design - Master Task Subcontract procurement is on schedule for August 1, 1994. The subcontractor proposal for conceptual design includes a white paper, a Conceptual Design Report, a cost estimate, and a schedule for construction.

Waste Storage

Doors and Vents - The remaining doors have been delivered. During the week of July 4, 1994, one door was installed on the 750 Pad to ensure there were no installation problems. The majority of the carpenters were available to start installation of the doors after July 11, 1994.

Vent installation is complete on the 750 Pad. A revision to the "lift plan" requirements for the 904 Pad required some changes to the previously approved lift plan. The use of two different cranes and the minor revisions to the

format and content necessitated the revision. The lift plan will be approved, and the vent installation will commence in the near future.

Restack of the 904 Pad - The removal of the drums and the other material impeding the restack effort have commenced. A number of returned sample material drums from the subcontractor characterization efforts is among the material to be moved.

Waste Treatment - Remix - The Treatability Study contract is under final review and approval. The schedule for awarding the contract has slipped, but the schedule will not be impacted.

Waste Storage - Container procurement is still awaiting contract award. The estimated award date is August 3, 1994.

Interim Remedial Action

Water Management - Various maintenance items are under way: (1) all necessary RCRA inspections were performed in Building 910 and the Modular Storage Tanks, (2) new high-level probes have been installed and tested in the three Modular Storage Tanks, and (3) lightning protection has been installed and tested on the Alarms Telemetry System at the 308B pump house. A backflow preventer failed a Preventive Maintenance Operations test; the cause was determined to be the age of the backflow preventer. The assembly was rebuilt.

The Building 779 storm drain extension proposal was received and is now undergoing a technical evaluation. The construction completion milestone of July 13, 1994, was missed because of the multiple estimates and proposals required to get the job started. A new construction completion date is being determined. The extension is expected to avoid the cost of unnecessarily treating storm water, and the delay does not impact the schedule of the Solar Ponds Projects.

Interim Measure Remediation

RCRA Facility Investigation - Responses are being developed to comments from the regulatory agencies for the OU 4 Draft Phase I RFI/RI Report. Draft comments for the report were received from the EPA on July 15, 1994.

Interim Measure/Interim Remedial Action - A directed modification was issued to the subcontractor on

July 5, 1994, to begin work on a modified IM/IRA Decision Document to include pond sludge disposal as part of the IM. New milestones will be negotiated as part of the ongoing dispute resolution.

All IM milestones have been affected by the current dispute concerning disposal of sludge. At a meeting of the regulatory agencies and the DOE to resolve the dispute, it was agreed that new milestones will be negotiated as part of the resolution.

Performance Monitoring - Responses are being developed to the CDPHE comments for the OU 4 Draft Post Closure Assessment and Monitoring Plan. Comments from the EPA have not yet been received, and this delay will require an IAG schedule extension.

Pre-Construction - A Davis-Bacon determination request was submitted for the entire Remediation/Closure construction project. This Davis-Bacon Decision came back "covered" for subcontracted work on July 7, 1994. The project is currently proceeding as scheduled; however, this decision may be reviewed and possibly reversed.

The construction activities for the Solar Ponds closure includes the implementation of the selected remedy scheduled to begin in September 1995 and several non-closure construction tasks to prepare the site. During the determination of whether the construction is covered under the Davis-Bacon Act, the decision of which contractor to perform the non-closure construction has become an issue. Several contract issues are involved in this decision as well as proper application of the definition of "construction" under the Davis-Bacon Act. Legal and contractual issues are under review. If the work is performed by the EG&G maintenance laboratory, project impacts may include additional costs and overhead support. Though some shifting of scope into FY95 may occur and cost impacts may occur, the critical path schedule is not anticipated to be impacted.

A working group from the DOE and EG&G traveled to the Savannah River Site to perform a comparative cost analysis of the OU 4 proposed "engineered barrier" versus the RCRA caps that have been constructed at the Savannah River site. The actual costs for the engineered barrier at the Rocky Flats Environmental Technology Site compared favorably with the costs of the caps at Savannah River.

A walkdown of Building 788 and associated RCRA units was conducted to identify those areas and pieces of equipment with a probable connection to the process waste stream. These items include, but are not limited to, the pug mill, the clarifier, the cement mixer, the silos, and the electrical panels and connections within Building 788. The photos taken during this exercise will be used as an engineering outline for the removal and decontamination process.

A Categorical Exclusion recommendation was approved by the EG&G National Environmental Policy Act Compliance Committee and transmitted to the DOE. The DOE submitted comments to EG&G on the recommendation for a Categorical Exclusion, and these comments were addressed by EG&G and delivered to the DOE on July 6, 1994. Issuance of the Categorical Exclusion by the DOE prior to October 3, 1994, is required to avoid schedule impact for this work.

On July 8, 1994, EG&G requested a Key Decision 3 from the DOE. The Key Decision 3 requests the start of sampling and the removal of the two cement silos located behind Building 788. These silos are not part of the RCRA Unit 48. This activity was delayed because of the uncertainty of the Davis-Bacon determination. This delay will not impact any IAG Milestones.

Conceptual Design - A directed modification was issued to the subcontractor on July 5, 1994, to begin work to modify the Conceptual Design portion of the IM/IRA Decision Document to include pond sludge disposal as part of the IM. New milestones will be negotiated as part of the ongoing dispute resolution.

The completion of the cargo container Scope and Estimate remains on schedule and will be completed by August 31, 1994.

Title II Design - A directed modification was issued to the subcontractor on July 5, 1994, to begin work on the incorporation of sludge under the engineered barrier, geotechnical analysis, utility verification, the general site improvement design package, all technical rebaselines, and the civil design for the gate.

Further information on the Hanford Barrier is required in order to optimize the current engineered barrier design.

During the week of July 11, 1994, the DOE received a letter from EG&G that requested this information.

The Title II design for Building 788 currently remains on schedule and will be issued for review on or before August 31, 1994.

The geotechnical analysis Work Plan was submitted by the subcontractor on July 14, 1994. The geotechnical information is currently on the critical path towards the IAG "start of construction" milestone and is essential in completing the Title II design. This work is currently on schedule to be completed on September 22, 1994.

On July 15, 1994, a job walkdown was conducted for the General Site Improvements detailed design. This design work continues to remain on schedule.

The 60 percent and 90 percent Title II designs and the IM/IRA Decision Document are currently behind the baseline schedule because of the delays in delivery of the design input data from the subcontractor.

Interim Measure Sludge

Testing and Operations - The final rinse down and cleanup of B South Pond continued. The crates were placed in the pond to hold the remaining heel of sand and gravel. The crates were placed in the pond by a crane and will be filled with sand and gravel and will be removed by the crane for storage on the 750 pad. Completion of this final cleaning will allow the RFI data collection samples to proceed through the bottom of the pond liner.

Preliminary salt milling was completed in C Pond on July 15, 1994. Except for one area in the northeast corner of the pond, all of the salt has been milled. The sludge has been moved to the southeast corner of the pond. The sludge in the northeast corner cannot be moved until sufficient sludge is removed from the southeast corner. C Pond vacuuming operations are still awaiting resolution of permitting issues with the CDPHE. The CDPHE approved the change to interim status with the condition that the sampling and characterization of the waste be repeated. The DOE is discussing this issue with the CDPHE.

Construction - This effort is nearing a conclusion. Significant remaining items include installation and testing

of the last group of tanks in Tent 6 (~80 percent complete) and modifications and removals around C Pond.

Planned Work for August

- Commence sludge removal operations in Pond 207C (this activity is contingent upon resolution of the final condition from the CDPHE on recharacterization of sludge) and completion of the final rinse down in B Pond.
- Commence the Title II Design of site strip out and vehicle access at Portal Three.
- Respond to and/or incorporate comments on the Phase I RFI/RI Report, the Phase II RFI/RI Work Plan, and the Post Closure Performance and Monitoring Plan.

Problems

The resolution of the contingent approval of the Interim Status permit for storing Pond 207C and clarifier material on the 750 Pad.

Open Items

Incorporate treated pond sludge into the IM/IRA/dispute resolution that was initiated.

There is uncertainty regarding acceptance of the State of Colorado's Corrective Action Management Unit regulation. The State of Colorado ratified the Corrective Action Management Unit legislation that is more restrictive than the EPA's legislation. The effect of the more restrictive legislation on the OU 4 remediation is not yet known.

2.5 OU 5 - WOMAN CREEK

OU 5, the Woman Creek Priority Drainage, encompasses assessment and remediation of 11 IHSSs in the Woman Creek drainage: Original Landfill (IHSS 115); Ash Pits (IHSS 133.1 - 133.4); Incinerator (IHSS 133.5); Concrete Wash Pad (IHSS 133.6); Detention Ponds C-1 and C-2 (IHSS 142.10 and 142.11); Surface Disturbance (IHSS 209), southeast of Building 881; and Water Treatment Plant Backwash Pond (IHSS 196). Two additional surface disturbances have been identified, one south of the Ash Pits and a second west of IHSS 209. These last two sites have been included in the OU 5 Work Plan. IHSS 196 has been administratively assigned to this OU. Possible contamination in this OU was caused by landfill operations, stormwater runoff into holding ponds, and ash-pit operations. Constituents in OU 5 include depleted uranium, metals, solvents, pesticides, polychlorinated biphenyl, and volatile organic compounds. Media affected include soils, sediments, surface water, groundwater, and air.

Scope of Work Changes This Period None

Technical Approach Changes This Period None

IAG Milestone	Submit Draft Phase I RFI/RI Work Plan	05 Apr 91
Accomplishments	Submit Final Phase I RFI/RI Work Plan	30 Aug 91

Future IAG Milestones Through FY95

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit Draft Phase I RFI/RI Report	30 Nov 93		11 May 95*
Submit Final Phase I RFI/RI Report	03 May 94		14 Nov 95*

* Completion date to be rescheduled because of the Human Health Risk Assessment stop work order.

July Work Activity Status The comment/response sheets to TM #13, *Modeling*, were returned by the EPA in June 1994 with minor comments. These comments were responded to and delivered to the regulatory agencies on July 1, 1994.

The DOE received the revised OU 5 RFI/RI schedule on July 1, 1994, along with the revised schedules for OUs 2, 3, and 6. Comments related to the assumptions associated with the revised risk assessment schedule were received, and the DOE received a formal response on July 7, 1994.

On July 12, 1994, a Modeling meeting was held with the EPA and the CDPHE to discuss the modeling status for each OU. The Rocky Flats Environmental Technology Site modeling efforts were presented for air, surface water, groundwater, and contaminant transport for the OUs and the sitewide activities.

Efforts continue on the groundwater modeling activities. To date, a map of the bedrock surface in the OU 5 area, a boundaries map to be used for assigning boundary conditions, and active and nonactive cells for modeling were completed. Additionally, a base map containing all physical features pertinent to groundwater modeling was entered into preprocessor software for the groundwater model, and a preliminary grid was established.

Efforts continue on the air dispersion modeling on the Fugitive Dust Model. A source is needed for the meteorological input parameters required for the Fugitive Dust Model that are not routinely collected at the Rocky Flats Environmental Technology Site. The Rocky Flats meteorological tower has the ability to provide all required input parameters except mixing height values. Methods to calculate these values are being investigated by EG&G. The plan includes a review of five years of data. Additional progress that has occurred includes the review of methods for the estimate of threshold wind speeds and the determination of the particulate source areas in OU 5. These source areas consist of those areas where above background levels of radionuclides have been detected in surface soils. Receptor source input parameters for the Fugitive Dust Model were also prepared.

Final review comments on TM #15, *Addendum to the Field Sampling Plan*, were received from the EPA and the CDPHE on July 18, 1994, with no major barriers. The EPA requested that all comments be addressed satisfactorily before formal approval of the document is granted. The EPA did approve the start of field work for the scope of work in order for progress to continue on OU 5. The DOE believes that starting field work without the approval of the EPA concerning the amount of sampling to be conducted is risky, and the DOE has requested that implementation of the field work wait until conditional approval is obtained from the EPA. The response to comments on TM #15, *Addendum to the Field Sampling Plan*, was completed and is being reviewed by the DOE.

The problems with the Statistical Application Software code for the Gilbert methodology background were resolved. Histograms and box plots were generated. The background comparison will be completed on August 1, 1994.

Technical Memoranda

Project

OU 5 - Woman Creek Priority Drainage Remedial Investigation

TM #1

TM Title

TM Status

Surface Water and Sediments

When preparation is concluded or is estimated to be concluded: 30 Nov 92

Projected date of submittal to EPA/CDPHE: 30 Nov 92

Actual date of submittal: 13 Oct 92

TM #2

TM Title

TM Status

Surface Geophysics

When preparation is concluded or is estimated to be concluded: 30 Nov 92

Projected date of submittal to EPA/CDPHE: 30 Nov 92

Actual date of submittal: 13 Oct 92

TM #3

TM Title

TM Status

Soil Sampling at IHSS 115

When preparation is concluded or is estimated to be concluded: 07 May 93

Projected date of submittal to EPA/CDPHE: 07 May 93

Actual date of submittal: 26 Jan 93

TM #4

TM Title

TM Status

Soil Sampling at IHSS 133

When preparation is concluded or is estimated to be concluded: 07 Jun 93

Projected date of submittal to EPA/CDPHE: 07 Jun 93

Actual date of submittal: 12 Apr 93

TM #5

TM Title

TM Status

Soil Gas Sampling at IHSS 115

When preparation is concluded or is estimated to be concluded: 07 May 93

Projected date of submittal to EPA/CDPHE: 07 May 93

Actual date of submittal: 25 Mar 93

TM #6	Cone Penetrometer at IHSS 115
TM Title	When preparation is concluded or is estimated to be
TM Status	concluded: 14 Apr 93
	Projected date of submittal to EPA/CDPHE: 14 Apr 93
	Actual date of submittal: 25 Mar 93
TM #7	Soil Borings at IHSS 133
TM Title	When preparation is concluded or is estimated to be
TM Status	concluded: 07 May 93
	Projected date of submittal to EPA/CDPHE: 07 May 93
	Actual date of submittal: 19 Feb 93
TM #8	Monitoring Wells at IHSS 115
TM Title	TM #8 has been canceled, and has been replaced by a
TM Status	letter outlining the justification behind the location of the
	wells in IHSS 115.
TM #9	Monitoring Wells at IHSS 133, Ash Pits, Incinerator and
TM Title	Concrete Wash Pad
TM Status	When preparation is concluded or is estimated to be
	concluded: 14 May 93
	Projected date of submittal to EPA/CDPHE: 06 May 93
	Actual date of submittal: 06 May 93
	EPA/CDPHE comments scheduled: 11 Jun 93
	Actual date of submittal: 28 Jun 93
TM #10	Soil Borings at IHSS 209
TM Title	When preparation is concluded or is estimated to be
TM Status	concluded: 06 Mar 93
	Projected date of submittal to EPA/CDPHE: 06 Mar 93
	Actual date of submittal: 06 Mar 93
TM #11	Contaminants of Concern
TM Title	When preparation is concluded or is estimated to be
TM Status	concluded: 15 Nov 94
	Submittal of TM #11 was delayed due to the Human
	Health Risk Assessment stop work order.
TM #12	Exposure Scenarios
TM Title	When preparation is concluded or is estimated to be
TM Status	concluded: 24 Nov 93

Submittal of TM #12 was delayed due to the Human Health Risk Assessment stop work order.

TM #13
TM Title
TM Status

Modeling
When preparation is concluded or is estimated to be concluded: 01 Dec 93
Actual submittal of the draft final report to EPA/CDPHE: Dec 93
Actual approval date: To be determined

TM #14
TM Title
TM Status

Toxicity Assessment
When preparation is concluded or is estimated to be concluded: 24 Oct 94
Projected date of Draft Final submittal to EPA/CDPHE: 24 Oct 94

TM #15
TM Title
TM Status

Addendum to the Field Sampling Plan
When preparation is concluded or is estimated to be concluded: 22 Jul 94
Projected date of Draft Final submittal to EPA/CDPHE: 22 Jul 94
Actual date of submittal: 16 May 94

Planned Work for August

- Continue work on the Human Health Risk Assessment (data aggregation and background statistical analysis).
- Obtain the regulatory agencies' approval on TM #13, *Modeling*.
- Obtain the regulatory agencies' approval on TM #15, *Addendum to the Field Sampling Plan*.

Problems

None

Open Items

The revised schedule, which incorporates impacts from the Human Health Risk Assessment stop work order, has not been approved.

2.6 OU 6 - WALNUT CREEK

Operable Unit 6, the Walnut Creek Priority Drainage, encompasses assessment and remediation of 19 IHSSs: A-series Detention Ponds, Ponds A-1 through A-4 (IHSS 142.1 through 142.4 and 142.12); the B-series Detention Ponds, Ponds B-1 through B-5 (IHSS 142.5 through 142.9); the North Spray Field (IHSS 167.1); the East Area Spray Field (IHSS 216.1), the Trenches A, B and C (IHSS 166.1, 166.2 and 166.3); the Sludge Dispersal Area (IHSS 141); the Triangle Area (IHSS 165); the Old Outfall Area (IHSS 143); and the Soil Dump Area (IHSS 156.2).

Field operations completed stream sediment, pond sediment, surface soil, subsurface soil, and surface and groundwater sampling in the OU 6 IHSSs..

Eleven new groundwater monitoring wells were installed in OU 6 to supplement five existing wells. These were sampled quarterly for one year. Geophysical surveys and radiation surveys were performed in selected areas to supplement the sampling activities.

The regulatory agencies have proposed a new IM/IRA on the operation of the Rocky Flats Environmental Technology Site Ponds. On April 15, 1994, the regulatory agencies and the DOE agreed that the ponds will be managed by the Pond Water Management IM/IRA.

Scope of Work Changes This Period None

Technical Approach Changes This Period None

IAG Milestone Accomplishments	Submit Draft Phase I RFI/RI Work Plan	19 Apr 91
	Submit Final Phase I RFI/RI Work Plan	16 Sep 91

Future IAG Milestones Through FY95

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit Draft Phase I RFI/RI Report	04 Aug 93	31 Jul 95	31 Jul 95*
Submit Final Phase I RFI/RI Report	07 Jan 94	12 Jan 96	12 Jan 96*

* Completion date to be rescheduled because of the Human Health Risk Assessment stop work order.

July Work Activity Status The polychlorinated biphenyl sampling project was completed on July 6, 1994. Fish were sampled by using a sample shipment, and cleanup continued for approximately three days. The last of the polychlorinated biphenyl sampling project samples were shipped to the analytical laboratories on July 13, 1994. Efforts have

begin to ensure that the analytical results will be returned within the allotted time to prevent these activities from becoming critical path.

A risk assessment data aggregation meeting was held on June 29, 1994, with the regulatory agencies. The purpose of this meeting was to clarify the guidance given by the regulatory agencies and to present potential problems with OU 6 that will result from this guidance.

Work has begun on a modification to the OU 6 Work Plan implementation subcontract to incorporate the new risk assessment guidance.

The efforts on the Nature and Extent activities continue. Section Three of the final report, Physical Characteristics, was completed and is currently being reviewed. The Nature and Extent maps and tables were completed on July 29, 1994. Work continues on the text for Chapter Four of the Nature and Extent activities.

Preliminary work continues on developing the CDPHE source areas and the corresponding Areas of Concern Maps. The DOE received the Preliminary Draft of TM #4, *Contaminants of Concern*, on July 21, 1994. Work also continues on the Final TM #2, *Exposure Scenarios*, and the final revisions to TM #3, *Model Description*. The Draft TM #5, *Toxicity Assessment*, was received by the DOE on July 25, 1994, for review and comment.

Pond Water Management IM/IRA - A decision was made to proceed with the Draft Pond Water IM/IRA Decision Document by including all options and developing a set of criteria and weightings against which the options will be evaluated. The list of evaluation criteria and the descriptions and weightings of the criteria were sent to the regulatory agencies the week of July 11, 1994.

The Document Review Comment Record on the Draft Pond Water Management IM/IRA dated November 22, 1993, was submitted to the EPA and the CDPHE on July 14, 1994.

Technical Memoranda

Project

OU 6 - Walnut Creek

TM #1

TM Title

TM Status

Work Plan Modifications

Approved by the EPA: 08 Jan 93

TM #2

TM Title

TM Status

Exposure Scenarios

When preparation is concluded or estimated to be concluded: 15 Nov 94

Projected date of submittal to EPA/CDPHE: 15 Nov 94

Actual date of submittal: To be determined

Date EPA/CDPHE comments were received: To be determined

TM #3

TM Title

TM Status

Modeling Description

When preparation is concluded or is estimated to be concluded: 10 Nov 93

Projected date of submittal to EPA/CDPHE: 10 Nov 93

Actual date of submittal: 10 Nov 93

Date EPA/CDPHE comments were received: 23 Dec 93

TM #4

TM Title

TM Status

Contaminants of Concern

When preparation is concluded or is estimated to be concluded: 29 Aug 94

Projected date of submittal to EPA/CDPHE: 29 Aug 94

Actual date of submittal: To be determined

Date EPA/CDPHE comments were received: To be determined

TM #5

TM Title

TM Status

Toxicity Factors

When preparation is concluded or is estimated to be concluded: 05 Aug 94

Projected date of submittal to EPA/CDPHE: 05 Aug 94

Actual date of submittal: To be determined

Date EPA/CDPHE comments were received: To be determined

Planned Work for August

- Begin preliminary preparations for starting the FS activities in September 1994.
- Receive approval on the revised scope and schedule for the Human Health Risk Assessment.

DOE-RFFO

Problems

None

Open Items

The revised schedule, which incorporates impacts from the Human Health Risk Assessment stop work order, has not been approved.

2.7 OU 7 - PRESENT LANDFILL

OU 7, the Present Landfill, is located north of the plant complex on the western edge of an unnamed tributary of North Walnut Creek and is comprised of four IHSSs. IHSS 114 includes landfill waste and leachate at the Present Landfill and soils beneath the landfill potentially contaminated with leachate. IHSS 203 contains potentially contaminated soils at the Inactive Hazardous Waste Storage Area. A section of the Present Landfill located in the southwest corner was used between 1986 and 1987 as a temporary storage area for hazardous waste. The Present Landfill began operation in August 1968 and was originally constructed to provide for disposal of the Rocky Flats Environmental Technology Site nonradioactive and nonhazardous wastes. In September 1973, tritium was detected in leachate from the landfill. During the mid-1980s, extensive investigations were conducted on the waste streams (types) placed into the landfill; consequently, hazardous wastes/hazardous constituents were identified. Although currently operating as a nonhazardous sanitary landfill, the facility is considered an inactive hazardous waste disposal unit undergoing RCRA closure. In order to maintain the landfill pond at an acceptable volume to prevent discharge, spray evaporation of landfill pond water was applied to the north and south of the landfill pond comprising IHSSs 167.2 and 167.3, respectively. The practice of spray evaporation was discontinued in 1993.

Scope of Work Changes This Period

As a result of the Senior Executive Committee Dispute Resolution, four new milestones were added to the OU 7 work scope concerning the Landfill Leachate Collection IM/IRA. As directed by the regulatory agencies and the DOE, the Landfill Leachate Collection project will be completed as an accelerated action.

Technical Approach Changes This Period

As a result of the Senior Executive Committee Dispute Resolution, a separate IM/IRA is required for the landfill leachate. As directed by the regulatory agencies and the DOE, the Landfill Leachate Collection project will be completed as an accelerated action.

IAG Milestone Accomplishments

Submit Draft Phase I RFI/RI Work Plan	08 Jun 90
Submit Final Phase I RFI/RI Work Plan	28 Aug 91
Submit Draft Phase I RFI/RI Report	23 May 94
Submit Draft Phase II RFI/RI Work Plan	23 May 94

Future IAG Milestones Through FY95

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
<u>Landfill Closure IM/IRA</u>			
Submit Draft Phase I Proposed IM/IRA Decision Document	03 May 95 *		01 Nov 94

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit Final Phase I Proposed IM/IRA Decision Document	06 Apr 95		03 Jul 95*
Submit IM/IRA Responsiveness Summary	14 Aug 95		04 Oct 95*
<u>Landfill Leachate Collection IM/IRA</u>			
Submit Preliminary Draft IM/IRA to CDPHE/EPA	14 Oct 94		14 Oct 94
Release Final draft IM/IRA for Public Comment	25 Nov 94		25 Nov 94
Submit Final Responsiveness Summary and IM/IRA to CDPHE/EPA	08 Mar 95		08 Mar 95
Release Final Responsiveness Summary and IM/IRA	22 Mar 95		22 Mar 95

- * Still under negotiation. The regulatory agencies have asked for longer time periods to review the documents and this request will impact document deliverable dates.

July Work Activity Status

Comments from the EPA on the TM, *Revised Work Plan*, were received on July 5, 1994. The responsiveness summary for the CDPHE and the EPA comments on the TM was transmitted for agency approval on July 27, 1994. The delay in the approval process could potentially impact the critical path activities and postpone Phase II field work.

The following issues were discussed in July 1994: the revised scope of the project, the overall landfill closure design, the schedule, and the adoption of the Proposed Action Memorandum for the leachate collection system. On July 6, 1994, EG&G visited the landfill to investigate the seep where the leachate collection system will be installed. As a result of verbal guidance from the CDPHE and the EPA, the following assumptions were made regarding the Landfill Leachate Collection IM/IRA: (1) a leachate collection system should be in place by the summer of 1995, (2) the collection of leachate should take place only at the seep, (3) an existing facility for leachate treatment will be used, (4) the collection will not go to bedrock (3 to 5 feet), (5) existing storage facilities at OU 4 will be used or a tank will be placed at OU 7, (6) an action memorandum should be submitted in lieu of an IM/IRA Decision Document, and (7) the National Environmental Policy Act will be integrated in the CERCLA documentation.

Work has begun on the wetlands assessment for construction of the leachate collection system. The wetlands assessment will be completed in September 1994.

The scope of the risk assessment will be limited to the surrounding soils not under the landfill cap.

Technical Memoranda

Project

OU 7 - Present Landfill

TM #1

TM Title

TM Status

Exposure Scenarios

Initial reviews were completed by the DOE/HQ and the DOE/RFFO. The review was completed by the EPA and the CDPHE. The response summary was developed and submitted to all parties for review. Reviews were completed. A revised response summary was completed on May 25, 1993, with a final review under way prior to transmittal to the regulatory agencies.

TM #2

TM Title

TM Status

Model Description

Transmitted to the EPA and the CDPHE for review:

08 Jan 93

Initial review by the EPA, the CDPHE, and the DOE completed: 30 April 93

Draft response summary complete: 25 May 93

TM #3

TM Title

TM Status

Addendum to Final Phase I RFI/RI Work Plan Surface Soil and Asbestos Pit Disposal Area Characterization Plan

Transmitted to the EPA and the CDPHE for review:

08 Feb 93

Comments received: 26 Apr 93

Conditional approval by the EPA and the CDPHE received: 22 Feb 93

Clarification of outstanding comments from the EPA and the CDPHE received: 03 May 93

TM

TM Title

TM Status

Revised Work Plan

Transmitted to the EPA and the CDPHE for review:

23 May 94

Comments received: 01 July 94

Planned Work for August

- Continue development of the Landfill Closure Environmental Assessment.

- Continue work on the options analysis and the conceptual design for the leachate collection and landfill closure.
- Receive formal approval from the regulatory agencies on the TM, *Revised Work Plan*.
- Conduct the Readiness Review for field activities.
- Obtain necessary permits for field activities.

Problems

None

Open Items

Awaiting approval on the TM, *Revised Work Plan*.

2.8 OU 8 - 700 AREA

The 24 IHSSs that constitute OU 8 encompass separate sites inside and around the production area of the Rocky Flats Environmental Technology Site. Contamination sources within the various IHSSs include above ground and underground tanks, equipment washing areas, and releases inside buildings that potentially affected areas outside the buildings. Contaminants from these sources may have been introduced into the environment through spills on the ground surface, underground leakage and infiltration, and in some cases, through precipitation runoff. The chemical composition of the contaminants varies widely between the IHSSs and ranges from low-level radioactive mixed wastes to nonradioactive organic and inorganic compounds.

OU 8 is within the Industrial Area (IA) at the Rocky Flats Environmental Technology Site and is being managed collectively with the other OUs that are within the IA. The IA OUs consist of OUs 8, 9, 10, 12, 13, and 14. All of these OUs are being investigated collectively because of similarities in the field work for these OUs (e. g. surficial soil sampling, *in situ* radiation surveys, and soil gas sampling). Combining this work will result in improved oversight, coordination, and reduced costs.

Scope of Work
Changes This Period None

Technical Approach
Changes This Period None

IAG Milestone Accomplishments	Submit Draft Phase I RFI/RI Work Plan	01 May 92
	Submit Final Phase I RFI/RI Work Plan	01 Dec 92

Future IAG Milestone Through FY95

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit Draft Phase I RFI/RI Report	14 Feb 94	Tolling Agreement	15 Aug 02
Submit Final Phase I RFI/RI Report	12 Jul 94	Tolling Agreement	26 Aug 03

July Work Activity Status In anticipation of the start of the nonintrusive field investigation of OU 8, preparations are under way for the Operational Readiness Review. To complete the Operational Readiness Review, the OU 8 Work Plan must be formally approved by the regulatory agencies. In preparation for the nonintrusive work, site walks have been completed.

Efforts continued on the preparation of the Draft Plan for Remediation of the IA. The DOE will receive a second draft of the plan on August 5, 1994.

The review period for the Preliminary Draft TM #1, *Data Compilation for Foundation and Building Under Drains*, ended in May 1994. Comments received to date have been transmitted to the subcontractor for incorporation into the revised TM #1. Comments from the EPA are pending.

Early removal actions consisting of removal of two steam condensate tanks and a sodium hydroxide tank from north of Building 774 continue and are expected to be completed during FY 94.

A Change Order has been awarded to the subcontractor to allow continuation of work while the proposal for the remaining nonintrusive field work is in review and negotiation. The proposal for this work has been received and is presently in the Technical Evaluation stage.

A second OU 8 milestone, submittal of the Final Phase I RFI/RI Report, was missed on July 12, 1994. However, the Tolling Agreement has been signed by the regulatory agencies, and this agreement has effectively resolved the issue of missed IAG milestones.

Industrial Area Operable Units (8,9,10,12,13, and 14) -
The Tolling Agreement was signed by the regulatory agencies and the DOE. This agreement proposes a lump sum payment in lieu of penalties for any past or future missed IAG milestones on OUs in the IA. The adoption of the Tolling Agreement for these OUs effectively resolves the issue of missed IAG milestones.

Work to begin the environmental evaluation's summer sampling continues. Field activities are planned for August 1994. Preparations for this field work have been initiated.

A proposal for conducting a sitewide Environmental Evaluation was presented. This proposal looks at the entire area surrounding Rocky Flats Environmental Technology Site instead of on an OU by OU basis. In this proposal, the IA OUs are considered a source area. Schedules for the Environmental Evaluation may be impacted if this proposal is accepted.

The Statement of Work to develop and implement the IA Surface Water and Sediment TM was submitted to Procurement on July 25, 1994. Work to begin the TM is scheduled to begin on August 1, 1994. The TM will assess the current information available on the Surface Water and Sediments within the IA and present a Field Sampling Plan to fill in data gaps.

Technical Memoranda

Project

OU 8 - 700 Area

TM #1

TM Title

Footings/Under Drains Data Compilation and Field Sampling Plan

TM Status

Projected date of submittal to EPA/CDPHE: 22 Apr 94

Actual date of submittal: 05 May 94

Date when EPA/CDPHE comments received: Pending

Planned Work for August

- Prepare the FY95 Work packages.
- Prepare for the start of the nonintrusive (Stage II) RFI/RI field investigation, including the Operational Readiness Review.
- Finalize the Phase I RFI/RI Work Plan history file. Address any deficiencies noted by the Document Control Section.
- Issue the Phase I RFI/RI Work Plan as a controlled document.
- Start the Stage II field investigation.

Problems

None

Open Items

None

2.9 OU 9 - ORIGINAL PROCESS WASTE LINES

This project involves the investigation and remediation of a series of tanks and associated process waste lines. The original process waste lines consisted of 35,000 feet of buried pipeline that transferred process wastes from production buildings to onsite treatment plants. A system of 60 designated pipe sections, 40 single and multiple storage tank sites, and three other areas of suspected process waste leakage is included in OU 9. The system was placed into operation in 1952, and additions were made to the system through 1975. The original system was replaced between 1975 and 1984 by the new process waste system. Some tanks and lines from the original system were incorporated into either the new process waste system or the fire water deluge collection system.

The original system is known to have transported or stored various aqueous process wastes containing low-level radioactive materials, nitrates, caustics, and acids. Small quantities of other liquids were also introduced in the system, including medical decontamination fluids, miscellaneous laboratory liquids, and laundry effluent. The RFI/RI Phase I Work Plan includes inspection and sampling of the tanks and pipelines that are accessible and soil sampling to determine the extent of contamination in the vadose zone. The soil sampling will be performed by installing test pits and boring where known or suspected releases occurred, near pipe joints and valves, at approximately 100 to 200-foot intervals along the pipelines, and by installing borings around the outdoor tanks. Soil characterization studies will determine the need for soil removal and/or treatment. The results of the Phase I RFI/RI will determine the need for interim and/or final remediation action.

OU 9 is within the IA at the Rocky Flats Environmental Technology Site and is being managed collectively with the other OUs that are within the IA. The IA OUs consist of OUs 8, 9, 10, 12, 13, and 14. All of these OUs are being investigated collectively because of similarities in the field work for these OUs (e. g. surficial soil sampling, *in situ* radiation surveys, and soil gas sampling). Combining this work will result in improved oversight, coordination, and reduced costs.

Scope of Work
Changes This Period None

Technical Approach
Changes This Period None

IAG Milestone	Submit Draft Phase I RFI/RI Work Plan	08 Jun 90
Accomplishments	Submit Final Phase I RFI/RI Work Plan	26 Nov 91

Future IAG Milestones Through FY95

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit Draft Phase I RFI/RI Report	11 Apr 94	Tolling Agreement	20 Mar 01
Submit Final Phase I RFI/RI Report	06 Sep 94	Tolling Agreement	16 Sep 03

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit Draft Phase II RF/RI Work Plan	10 Mar 95		23 Jul 04
Submit Draft Phase I Proposed IM/IRA Decision Document	01 May 95		31 Oct 03
Submit Final Phase II RF/RI Work Plan	07 Aug 95		01 Apr 05
Submit Final Phase I Proposed IM/IRA Decision Document	27 Sep 95		12 Jul 04

July Work Activity Status

The Tolling Agreement has been signed. This agreement addresses the missed OU 9 IAG milestones and milestones that are likely to be missed between July 1994 and January 31, 1995. The EPA and the CDPHE agreed to not issue any Notice of Violation for any of the milestones listed in the Tolling Agreement that are in violation of the IAG between the present and January 31, 1995.

A list of assumptions for OU 9 milestones has been prepared for the negotiations on the Rocky Flats Cleanup Agreement. These assumptions will be reviewed and combined with assumptions from other OUs before being incorporated into the Rocky Flats Cleanup Agreement.

The CDPHE has proposed that active outside tanks that are not RCRA Interim Status tanks should be included in the outside tank investigation. This would add six tanks to the investigation. The CDPHE approval on the other portion of the TM has not yet been granted. A letter proposing that Tanks T-11 and T-30 be investigated and Tanks T-8 and T-9 be deferred is in preparation.

Delays in obtaining a collar for shielding the high purity Germanium mobile survey unit will potentially delay the detailed radiation survey of the outside tanks. The collar will allow the unit to make measurements over a smaller field and will screen out shine from the buildings. These delays are currently not expected to impact the overall schedule for the investigation of outside tanks; however, an alternative method is being considered to utilize the unit without the collar.

The review of the Preliminary Draft TM #1, *Volume II, Part A - Field Sampling Plan for Outside Pipelines*, is still in progress. The comments from the DOE have been incorporated. After comments on the preliminary draft have been incorporated, this document will be submitted for a concurrent DOE and EG&G review.

The technical evaluation on a proposal for training for the OU 9 Outside Tank Investigation and modification of the IA Health and Safety Plan was completed. This will allow field preparations to be made before soliciting the actual field work. A Statement of Work for the field activities was started but is not complete. A draft table of contents for the Health and Safety Plan modification was also developed and reviewed.

The list of training requirements for the OU 9 Outside Tank Investigation field work was prepared. Although official approval of the Field Sampling Plan has not been received, a Change Order is in effect so that the training can be initiated for the subcontractor personnel. No modifications or addenda to the plan are expected to change the training requirements.

A draft plan streamlining the RFI/RI process at OU 9 has been developed and submitted to the DOE. Concurrence by the regulatory agencies and the DOE is needed on some of the items because the IAG milestones for the Phase II RFI/RI and the IM/IRA could be potentially eliminated.

Six tanks located on four sites in OU 9 have been identified and are under consideration as potential early action areas. Field sampling has not yet been implemented at any of the sites. Sampling will begin in the upcoming months. Provisions currently under consideration in the Rocky Flats Cleanup Agreement will allow for removal actions; however, because efforts towards early actions have been expedited, some of these efforts might be ready for implementation prior to the effective date for the Rocky Flats Cleanup Agreement. In line with the effort to accelerate removal actions, alternate measures are being examined to allow for the removal of tanks and soils within the limits of the IAG. This could potentially include TMs on removal actions and/or an attachment to an existing IM/IRA. If tanks cannot be removed without public comment, a Proposed Action Memorandum will be prepared to address tank removals.

Technical Memoranda

Project

OU 9 - Original Process Waste Lines

TM #1

TM Title

Field Sampling Plan - Original Process Waste Lines -
Volume I, Part A, Outside Tanks

TM Status

When preparation is concluded or is estimated to be
concluded: Jan 94

Projected date of submittal to EPA/CDPHE: Mar 94

Actual date of submittal: 15 Mar 94

Date EPA/CDPHE comments received: To be
determined

TM #1

TM Title

Field Sampling Plan - Volume II, Part A, Outside
Pipelines

TM Status

When preparation is concluded or is estimated to be
concluded: Jul 94

Projected date of submittal to EPA/CDPHE: Aug 94

Actual date of submittal: To be determined

Date EPA/CDPHE comments received: To be
determined

Planned Work for August

- Complete Draft TM #1, *Field Sampling Plan - Volume II A - Outside Pipelines*.
- Continue training activities and the Health and Safety Plan modification for outside tank field work.
- Prepare Statement of Work for outside tank field work.

Problems

None

Open Items

None

2.10 OU 10 - OTHER OUTSIDE CLOSURES

OU 10 is composed of 15 IHSSs scattered throughout Rocky Flats. Six of the IHSSs are located in the Protected Area, two are located in the buffer zone near the present landfill, and the remaining IHSSs are located near various buildings throughout Rocky Flats. The types of wastes and contaminants identified at these sites include pondcrete/saltcrete storage, diesel and fuel spills, and heavy metal contamination. A Draft and Final TM will be developed that will summarize the nonintrusive portion of the OU 10 field work. Other IHSS-specific intrusive activities are scheduled for FY94.

OU 10 is currently being managed collectively with the other IA OUs (8, 9, 12, 13, and 14). All of these OUs are being investigated collectively because of similarities in the field work for these OUs (e. g. surficial soil sampling, *in situ* radiation surveys, and soil gas sampling). Combining this work will result in improved oversight, coordination, and reduced costs.

Scope of Work
Changes This Period None

Technical Approach
Changes This Period None

IAG Milestone Accomplishments	Submit Draft Phase I RFI/RI Work Plan	27 Nov 91
	Submit Final Phase I RFI/RI Work Plan	01 May 92

Future IAG Milestones Through FY95

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit Draft Phase I RFI/RI Report	25 Aug 94	Tolling Agreement	02 Nov 15
Submit Final Phase I RFI/RI Report	30 Jan 95		19 Jul 16
Submit Draft Phase I Proposed IM/IRA Decision Document	26 May 95		26 Feb 18
Submit Draft Phase II RFI/RI Work Plan	27 Jun 95		25 May 17

July Work Activity Status The formal DOE audit findings report from the field investigation audit of soil gas sampling and the high purity Germanium detector surveys was received. All concerns were addressed by the Environmental Restoration Management.

In preparation to begin development of the OU 10 Phase I Nonintrusive TM, evaluation of invalidated nonintrusive sample data continued. This Draft TM is tentatively scheduled to be delivered to the DOE in November 1994.

The determination of the regulatory status of the tanks in OU 10 is currently being conducted by the regulatory agencies and the DOE. Resolution of the waste generation issues represent the most significant problems/barriers to completing the project. A final determination is expected by August 2, 1994.

On July 19, 1994, a meeting was held to discuss the logistics of the collection of physical parameter samples in OU 10 that are outlined in the Phase I RFI/RI Work Plan. Because of the large volume of samples that was prescribed by the analytical laboratory for the various analyses, it was decided that physical parameter samples will not be collected as part of Phase I nonintrusive sampling.

Surficial soil sampling at IHSS 206 in the Protected Area was completed on July 21, 1994. This completes all surficial soil sampling for OU 10 as part of the nonintrusive sampling activities. Soil gas sampling locations in IHSS 175 and 210 were completed on July 28, 1994. The soil gas rig will begin work on soil gas locations in OU 12.

Industrial Area Individual Hazardous Substance Site Material Removal/Accelerated Cleanup Actions - An additional evaluation of the IHSS 129 tank pull accelerated cleanup action was conducted. Specifically, the removal of tanks will be feasible under RCRA regulations. However, significant issues need to be resolved before this project can proceed. The major problems revolve around the presence of RCRA regulated wastes (TCE, TCA, and Methylene Chloride) in the subsurface at the site. This is primarily a waste generation issue, and until a solution can be found to appropriately manage the waste materials that are generated, no work will be authorized on this project. The DOE is working closely with EG&G to quickly resolve the issues related to this project.

The 964 Laydown Yard (IHSS 176) material removal project is under way. It is anticipated that all of the material stored on the east side of the IHSS can be removed by the end of August 1994. All previous conflicts between the soil gas crews in OU 10 and the accelerated action team work force have been resolved, and both projects are continuing without delay and/or interference.

Technical Memoranda

A new revised schedule has been developed for preparation and delivery of the Draft and Final OU 10 Phase I Nonintrusive TM. The new dates for delivery of the Draft and Final TMs are October 7, 1994, and February 10, 1995, respectively.

Planned Work for August

- Begin preparation of Preliminary Draft on the Phase I Nonintrusive TM.
- Finalize all nonintrusive data validation.

Problems

In OU 10, the IHSS 129 tank removal action could be delayed because of the unresolved regulatory issues related to the disposition of the tank. The tank was taken out of service in 1986. Prior to that time, RCRA regulated wastes (TCA, TCE and methylene chloride) were added to the contents of Tank #4, which was used to store No. 6 fuel oil. The question is whether this tank is regulated under RCRA or exempt with regard to the petroleum tank storage exemption. In the RCRA closure plan that was developed for this tank in 1988, specific reference is made that addresses the introduction of RCRA regulated wastes into this tank and states the tank should be regulated under RCRA hazardous waste requirements. Furthermore, EG&G is convinced that the tank in question is definitely regulated under RCRA and could not be exempt using the petroleum exclusion. The DOE has similar concerns as to the regulatory status of this tank. Until this issue is resolved to the satisfaction of both the DOE and EG&G, this project should not proceed under the current assumption of regulatory exemption.

Open Items

There has been no resolution of the issue concerning IHSSs 213 and 214. These areas still have not been administratively transferred to OU 4 or included as part of a RCRA Part B permit modification. Phase I Assessment work cannot be conducted at these IHSSs until all material has been removed.

2.11 OU 11 - WEST SPRAY FIELD

The West Spray Field is located within the Rocky Flats Environmental Technology Site buffer zone immediately west of the 130 Trailer complex. The West Spray Field was in operation from April 1982 to October 1985. During operation, excess liquids from solar evaporation ponds 207 B North and Center (contaminated groundwater in the vicinity of the ponds and treated sanitary sewage effluent) were pumped periodically to the West Spray Field for spray application. The spray field boundary covers an area of approximately 105 acres, 109 of which received direct application of solar pond water. The RFI/RI process will entail field studies to investigate the presence or absence of hazardous constituents in soil and groundwater.

**Scope of Work
Changes This Period**

None

**Technical Approach
Changes this Period**

A flow chart was developed to assist with decision making in the field. The flow chart is consistent with OU 11 Data Quality Objectives and the Field Sampling Plan.

The proposal to extend investigation outside of the IHSS (because of photographic evidence) was approved.

The approach to risk assessment TMs has been revised. Once field work is completed, the Risk Assessment TMs will be delivered after the data are analyzed.

**IAG Milestone
Accomplishments**

Submit Draft Phase I RFI/RI Work Plan	08 Jun 90
Submit Final Phase I RFI/RI Work Plan	02 Jan 92

**Future IAG Milestones
Through FY95**

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit Draft Phase I (combined) RFI/RI Report	20 Sep 94		20 Jul 95
Submit Final Phase RFI/RI Report	22 Feb 95		19 Sep 95
Submit Draft Phase II RFI/RI Work Plan	21 Aug 95		Deleted

July Work Activity Status

Surface Soil Sampling is complete. The investigatory drilling is 50 percent completed. The high purity Germanium survey monitoring of additional areas is on schedule.

Technical Memoranda

Project

OU 11 - West Spray Field

TM

TM Title

TM Status

Revised Field Sampling Plan and Data Quality Objectives
Informally submitted to EPA/CDPHE: 2 Feb 94
Approved.

TM #1

TM Title

TM Status

Exposure Scenarios
When preparation is concluded or is estimated to be
concluded: Mar 94 (late)
Projected date of submittal to EPA/CDPHE: 14 Dec 94
Actual date of submittal: To be determined
Date EPA/CDPHE comments received: To be
determined

TM #2

TM Title

TM Status

Modeling
When preparation is concluded or is estimated to be
concluded: 22 Mar 94 (late)
Projected date of submittal to EPA/CDPHE: 14 Dec 94
Actual date of submittal: To be determined
Date EPA/CDPHE comments received: To be
determined

TM #3

TM Title

TM Status

Contaminants of Concern
When preparation is concluded or is estimated to be
concluded: 20 Sep 94
Projected date of submittal to EPA/CDPHE: 09 Nov 94
Actual date of submittal: To be determined
Date EPA/CDPHE comments received: To be
determined

TM #4

TM Title

TM Status

Toxicity
When preparation is concluded or is estimated to be
concluded: 10 Oct 94
Projected date of submittal to EPA/CDPHE: 12 Dec 94
Actual date of submittal: To be determined
Date EPA/CDPHE comments received: To be
determined

Planned Work for August

- Finish drilling activities.
- Begin RFI/RI Report.
- Finish high purity Germanium survey.

Problems

Drilling activities in OU 11 are progressing slower than anticipated because of technical issues encountered at the beginning of the activities.

Open Items

The new risk assessment approach for OU 11 will be different from the approach originally planned. The new risk assessment will be within the regulatory requirements but will be significantly reduced in scope.

TM deliveries are not IAG milestones. TM completions will be tied to the completion of field Activities.

2.12 OU 12 - 400/800 AREA

The 400/800 Area involves assessment and remediation of the following 10 IHSSs within the 400/800 Area: Multiple Solvent Spills at the West and South Loading Dock Areas (IHSSs 116.1 and 116.2); Fiberglassing Areas North and West of Building 664 (IHSSs 120.1 and 120.2); Cooling Tower Ponds - northeast and southwest of Building 460 (IHSSs 136.1, and 136.2); Building 881 - Conversion Site (147.2); Radioactive Site - South Area (IHSS 157.2); Acid Leaks (2) (IHSS 187); and Multiple Acid Spills (IHSS 189).

Assessment will consist of preparing a Phase I RFI/RI Work Plan, which will include both an Environmental Evaluation and a Human Health Risk Assessment. Implementation of this Work Plan includes field work and sample analysis. After implementation, a Phase I RFI/RI Report will be prepared. A Phase II Investigation may be performed as necessary. An FS to determine the best methods to remediate the area will be conducted as part of the assessment.

Remediation may consist of development and execution of a Remedial Action Plan based on results obtained during the assessment phase of the project. This process includes review and approval by the regulatory agencies, followed by a Record of Decision, release to the public, and implementation of the plan.

OU 12 is within the IA at the Rocky Flats Environmental Technology Site and is being managed collectively with the other OUs that are within the IA. The IA OUs consist of OUs 8, 9, 10, 12, 13, and 14. All of these OUs are being investigated collectively because of similarities in the field work for these OUs (e. g. surficial soil sampling, *in situ* radiation surveys, and soil gas sampling). Combining this work will result in improved oversight, coordination, and reduced costs.

Scope of Work
Changes This Period None

Technical Approach
Changes This Period None

IAG Milestone Accomplishments	Submit Draft Phase I RFI/RI Work Plan	08 May 92
	Submit Final Phase I RFI/RI Work Plan	05 Oct 92

**Future IAG Milestones
Through FY95**

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit Draft Phase I RFI/RI Report	20 Apr 94	Tolling Agreement	11 Mar 99
Submit Final Phase I RFI/RI Report	15 Sep 94	Tolling Agreement	17 Nov 99

July Work Activity Status Preparations for the OU 12 soil gas surveys continue. Location staking and utility clearances are continuing. Within the integration of the IA OUs, OU 10 will need to finish its soil gas surveys before OU 12 may begin. There were some problems with the soil gas equipment, and OU 10 experienced some schedule slippage because of the down time of the equipment. It is planned that the soil gas crew will be able to take more samples to make up some of the schedule slippage. Soil gas surveys are planned to begin in OU 12 at the beginning of August 1994. Additionally, utility line areas are congested within OU 12; this congestion will slow down the clearing of locations.

The Statement of Work to develop and implement the IA Surface Water and Sediment TM has begun. Work to begin the TM is scheduled to begin on August 1, 1994. The TM will assess the current information available on the Surface Water and Sediments within the IA and present a Field Sampling Plan to fill in data gaps.

The Sodium Iodide surveys may be conducted along with the soil gas surveys. The soil gas surveys are conducted on a 25-foot grid, and the Sodium Iodide surveys are conducted on a 15-foot grid. Because of the proximity of the grids, these surveys can be conducted at the same time. When the soil gas rig is in place, the gas rig needs to run for a minimum length of time before the sample can be retrieved. While waiting for the soil gas sample to be retrieved, the Sodium Iodide surveys will be conducted.

Technical Memoranda None

Planned Work for August

- Begin soil gas surveys.
- Begin development of IA Sediment and Surface Water TM.
- Begin asphalt samples.
- Begin Sodium Iodide surveys.

Problems None

Open Items None

2.13 OU13-100 AREA

Cleanup of the 100 Area involves the assessment and remediation of 14 IHSSs: Chemical Storage - North, Middle, and South Sites (IHSSs 117.1, 117.2 and 117.3); Oil Burn Pit #1 (IHSS 128); Lithium Metal Destruction Site (IHSS 134); Waste Spills (IHSS 148); Fuel Oil Tank (IHSS 152); Radioactive Site - North Area (IHSS 157.1); Radioactive Site - Building 551 (IHSS 158); Waste Peroxide Drum Burial (IHSS 169); Solvent Burning Ground (IHSS 171); Valve Vault 12 (IHSS 186); Caustic Leak (IHSS 190); and the Hydrogen Peroxide Spill (IHSS 191), and the Scrap Metal Site (IHSS 197).

Assessment will consist of preparing a Phase I RFI/RI Work Plan, which will include both an Environmental Evaluation and a Human Health Risk Assessment. After implementation of this Work Plan, field work and sample analysis will be conducted, data will be analyzed, and the Phase I RI Report will be prepared. An FS to determine the best methods to remediate the area will be conducted as part of the assessment.

Remediation will consist of development and execution of a Remedial Action Plan based on results obtained during the assessment phase of the project. This process includes review and approval by the regulatory agencies, followed by a Record of Decision, release to the public, and implementation of the plan.

OU 13 is within the IA at the Rocky Flats Environmental Technology Site and is being managed collectively with the other OUs that are within the IA. The IA OUs consist of OUs 8, 9, 10, 12, 13, and 14. All of these OUs are being investigated collectively because of similarities in the field work for these OUs (e. g. surficial soil sampling, *in situ* radiation surveys, and soil gas sampling). Combining this work will result in improved oversight, coordination, and reduced costs.

**Scope of Work
Changes This Period**

None

**Technical Approach
Changes This Period**

None

**IAG Milestone
Accomplishments**

Submit Draft Phase I RFI/RI Work Plan	15 May 92
Submit Final Phase I RFI/ RI Work Plan	12 Oct 92

**Future IAG Milestones
Through FY95**

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit Draft Phase I RFI/RI Report	08 Aug 94	Tolling Agreement	24 Mar 99
Submit Final Phase I RFI/RI Report	11 Jan 95	Tolling Agreement	02 Dec 99

July Work Activity Status

The response to comments and the final revisions continue on the Draft OU 13 TM #1, *Addendum to the Field Sampling Plan*. Stage I Surficial Soil Sampling is complete. The estimate will be completed in August 1994.

Preparation of a Statement of Work for Geographic Information System support is under way. A modification to the contract to allow Stage I activities to be completed and Stage II activities to be initiated is also being prepared.

Surficial Soil Sampling in OU 13 is complete.

Technical Memoranda

Project

OU 13 - 100 Area

TM #1

TM Title

TM Status

Addendum to Field Sampling Plan

When preparation is concluded or is estimated to be concluded: Feb 94

Projected date of submittal to EPA/CDPHE: Feb 94

Actual date of submittal: 03 Mar 94

Date EPA comments were received: 16 May 94

A nonintrusive TM will be prepared in FY95 summarizing the nonintrusive field work and recommending Stage II activities for the remedial investigation intrusive field work.

Planned Work for August

- Complete contract modifications for soil gas work.

Problems

2.14 OU 14 - RADIOACTIVE SITES

Work at the "Radioactive Sites" involves the assessment and remediation of eight IHSSs: Radioactive Site - 700 Area Site #1 and Site #2 (IHSS 131); Radioactive Soil Burial - Building 334 Parking Lot and Soil Dump Area (IHSSs 156.1); Building 444 Parking Lot (IHSS 160) and Building 664 (IHSS 161); and Radioactive Site - 700 Area Site #2 (IHSS 162); and Radioactive Sites - 800 Area which includes the Concrete Slab, Building 886 Spills, and the Building 889 Storage Pad (IHSSs 164.1, 164.2, and 164.3). In 1991, one of two Soil Dump Area IHSSs (156.2) was deleted from OU 14 and added to OU 6.

Assessment will consist of preparing a Phase I RFI/RI Work Plan, which will include both an Environmental Evaluation and an Human Health Risk Assessment. After implementation of this work plan, field work and sample analysis will be conducted, data will be analyzed, and the Phase I RI Report will be prepared. An FS to determine the best methods to remediate the area will be conducted as a subsequent phase to the assessment phase.

Remediation will consist of development and execution of a Remedial Action Plan based on results obtained during the assessment phase and FS of the project. This process includes review and approval by the EPA and the CDPHE followed by a Record of Decision, release to the public, and implementation of the plan.

OU 14 is within the IA at the Rocky Flats Environmental Technology Site and is being managed collectively with the other OUs that are within the IA. The IA OUs consist of OUs 8, 9, 10, 12, 13, and 14. All of these OUs are being investigated collectively because of similarities in the field work for these OUs (e. g. surficial soil sampling, *in situ* radiation surveys, and soil gas sampling). Combining this work will result in improved oversight, coordination, and reduced costs.

Scope of Work
Changes This Period None

Technical Approach
Changes This Period None

IAG Milestone Accomplishments	Submit Draft Phase I RFI/RI Work Plan	26 Jun 92
	Submit Final Phase I RFI/RI Work Plan	19 Oct 92

Future IAG Milestones Through FY95

<u>Milestone Name</u>	<u>IAG Date</u> <u>Scheduled</u>	<u>Extension</u> <u>Status</u>	<u>Planned</u> <u>Accomplishment</u> <u>Date</u>
Submit Draft Phase I RFI/RI Report	20 Dec 94	Tolling Agreement	23 Apr 97
Submit Final Phase I RFI/RI Report	23 May 95		22 Oct 01

July Work Activity Status

Efforts continue on the proposal for a more streamlined and cost efficient way of conducting the field investigations at OU 14. A Draft Document Modification Request has been prepared to change the two-inch soil scrapes specified in the OU 14 Work Plan to be consistent with the GT.08 sampling techniques and the work in the other IA OUs. As directed by the IAG, this request has been approved by the DOE and transmitted to the CDPHE and the EPA for concurrence.

The Readiness Review for OU 14 is complete. The Sodium Iodide Radiation Surveys have been completed. Additional field activities are scheduled to begin on August 1, 1994.

Soil disturbance permits were prepared, submitted for approval, and were completed in July 1994.

A fiberglass underground storage tank for diesel fuel may exist under a parking lot in the 444 area near Building 427. This tank is not subject to regulation under the Underground Storage Tanks Program because it was removed from service prior to enactment of the regulation and does not appear on any of the site tank lists. EG&G is taking action to determine whether the tank exists. Upon that determination, an action plan to deal with the tank will be developed by the Accelerated Cleanup Team.

Technical Memoranda

The current Five-Year Plan indicates that two TMs, *Human Health Risk Assessment-Exposure Assessment* and *Human Health Risk Assessment-Modeling*, were scheduled for completion in March 1994. These tasks require rescheduling because of the integration of OUs 8, 9, 10, 12, 13, and 14. A new schedule has been developed. Currently, only nonintrusive/limited RI field work is scheduled for OU 14 in FY94.

A nonintrusive TM will be prepared in FY95 summarizing the nonintrusive field work and recommending Stage II activities for the RI intrusive field work.

Planned Work for August

- Begin surficial soils sampling.

Problems

There is a shortage of Radiation Control Technologists to assist in the removal of materials stored in the OU 13 IHSSs.

Open Items

The submission date of December 20, 1994, for the Draft Phase I RFI/RI report will not be met. The Tolling Agreement will include a new date for delivery of the Draft Phase I RFI/RI Report. The new date will be included in the Draft Rocky Flats Cleanup Agreement that is due on September 1, 1994.

2.15 OU 15 - INSIDE BUILDING CLOSURES

OU 15 was originally comprised of the following six IHSSs:

- IHSS 178, Building 881 - Drum Storage Area
- IHSS 179, Building 865 - Drum Storage Area
- IHSS 180, Building 883 - Drum Storage Area
- IHSS 204, RCRA Unit 45, Building 447 - Original Uranium Chip Roaster
- IHSS 211, RCRA Unit 26, Building 881 - Drum Storage Area
- IHSS 217, RCRA Unit 32, Building 881 - Cyanide Bench-Scale Treatment

Closure Plans for the IHSSs were submitted to the CDPHE during 1988 and 1989. The IHSSs were also included within the IAG. During scoping meetings in April 1992 for the Phase I RFI/RI Work Plan, the EPA, the CDPHE, and DOE agreed to combine the Closure Plan and RFI/RI processes. In effect, the Clean Closure Performance Standard (5 CCR 1007-3 Part 265.111) will serve as the Applicable or Relevant and Appropriate Requirements for the OU 15 RFI/RI inside buildings for hazardous and toxic materials. For radiological contamination, the IHSSs will utilize CERCLA standards.

Drums containing solids and liquids were stored at four of the six OU 15 IHSSs. Types of waste materials stored included oils, coolants, solvents containing chlorinated hydrocarbons (RCRA F001 and F002 wastes), and waste paints and metals contaminated with solvents. Hazardous constituents include chlorinated solvents beryllium. Radiological constituents included uranium. No known spills or releases have occurred. Characterization has been completed. The steps necessary to close the OU 15 IHSSs are currently in the development process. A Draft Proposed Plan for "No Further Action" is under development by EG&G and will be delivered to the regulatory agencies with the Final Phase I RFI/RI Report on January 4, 1995.

Scope of Work None
Changes This Period

Technical Approach None
Changes This Period

IAG Milestone Accomplishments	Submit Draft Phase I RFI/RI Work Plan	01 Jun 92
	Submit Final Phase I RFI/RI Work Plan	26 Oct 92
	Submit Draft Phase I RFI/RI Report	25 Jul 94

**Future IAG Milestones
Through FY95**

<u>Milestone Name</u>	<u>IAG Date</u> <u>Scheduled</u>	<u>Extension</u> <u>Status</u>	<u>Planned</u> <u>Accomplishment</u> <u>Date</u>
Submit Final Phase I RFI/RI Report	04 Jan 95		04 Jan 95

July Work Activity Status The verification sampling was completed. Sample analysis is in process on the Phase I RFI/RI Report. The Draft Phase I RFI/RI Report was submitted on July 25, 1994, in advance of the August 1, 1994, IAG milestone date. The subcontract modification is being processed to begin preparation of the Proposed Plan.

Technical Memoranda

Project

OU 15 - Inside Building Closures

TM #

TM Title

TM Status

Field Sampling Plan

When preparation is concluded or is estimated to be concluded:

Projected date of submittal to EPA/CDPHE: 28 Feb 94

Actual date of submittal: 28 Feb 94

Date comments were received: preliminary 17 Mar 94
[(formal 07 Apr 94)(CDPHE), 04 May 94 (EPA)]

TM #2

TM Title

TM Status

Human Health and Risk Assessment

When preparation is concluded or is estimated to be concluded:

Projected date of final submittal to EPA/CDPHE: May not be necessary.

Actual date of draft submittal: To be determined

Date comments were received: To be determined

Planned Work for August

- Receive and evaluate analysis results from verification sampling.
- Process baseline change proposal to begin the preparation of the Proposed Plan in FY94.

Problems

None

Open Items

Determination of activities necessary to close OU 15.

2.16 OU 16 - LOW-PRIORITY SITES

This assessment activity consists of preparing a No Action Justification Document for the following five IHSSs: Solvent Spill, Antifreeze Discharge, Steam Condensate Leaks (400 and 700 Areas), and Nickel Carbonyl Disposal. The No Action Justification Document was approved by the regulatory agencies, and the Record of Decision process was initiated to close OU 16 as an OU at the Rocky Flats Environmental Technology Site.

Scope of Work Changes This Period None

Technical Approach Changes This Period None

IAG Milestone Accomplishments	Submit Draft No Action Justification Document	04 Mar 92
	Submit Final No Action Justification Document	30 July 92
	Submit Revised Final No Action Justification Document	16 Oct 92
	Submit Draft Record of Decision	29 Apr 94

Future IAG Milestones Through FY95 None

July Work Activity Status The comments from the regulatory agencies on the Draft Record of Decision have been received.

Technical Memoranda None

Planned Work for August • Finalize the Record of Decision.

Problems The CDPHE provided comments on the Draft Record of Decision that include references to site-specific standards for tritium that was not previously discussed or included in the OU 16 documentation.

Open Items None

2.17 SITEWIDE ACTIVITIES

Sitewide activities include several tasks that encompass a wide variety of plans, procedures, reports, studies, and activities required by the IAG and that apply to the Rocky Flats environmental restoration activities in general. Activities include, but are not limited to, the Health Safety Plan, Sampling and Analysis Plan, Treatability Study deliverables, Background Study Plan, Groundwater Geochemistry, Risk Assessment, IA IM/IRA, hydrological characterization, Background Soils Study Plan, Decontamination Facilities, ER Waste handling facilities, groundwater monitoring, Decontamination and Decommissioning, and Program Management Support activities.

**Scope of Work
Changes This Period** None

**Technical Approach
Changes This Period** None

IAG Milestone Accomplishments	Submit Draft Background Study Report (Water)	15 Dec 89
	Submit Draft Background Study Report (Soils)	15 Dec 89
	Submit Draft Community Survey Plan	23 Jan 90
	Submit Final Community Survey Plan	22 Mar 90
	Submit Draft Health and Safety Plan	15 Aug 90
	Submit Draft Quality Assurance Project Plan	29 Aug 90
	Submit Draft Standard Operating Procedures	29 Aug 90
	Submit Draft Plan for Prevention of Contaminant Dispersion	19 Sep 90
	Submit Draft Treatability Study Plan	21 Sep 90
	Submit Draft Community Relations Plan	01 Nov 90
	Submit Final Health and Safety Plan	12 Nov 90
	Submit Revised Background Study Report	21 Dec 90
	Submit Final Community Relations Plan	22 Jan 91
	Submit Final Quality Assurance Project Plan	01 Mar 91
	Submit Final Standard Operating Procedures	01 Mar 91
	Submit Draft Radionuclides Discharge Limits Plan	05 Apr 91
	Submit Community Relations Plan Responsiveness Summary	21 Jun 91
	Submit Final Treatability Study Plan	03 Jun 91
	Submit Final Plan for Prevention of Contaminant Dispersion	22 Jul 91

Submit Final Plan Discharge Limits Radionuclides	16 Sep 91
Submit Final Plan for Prevention of Contaminant Dispersion and Responsiveness Summary	25 Nov 91
Submit Draft Historical Release Report	08 Jan 92
Submit Responsiveness Summary for Radionuclides Discharge Limits Plan	31 Jan 92
Submit Final Historical Release Report	03 Jun 92
Submit Annual Treatability Study Report	08 Mar 93
Submit Sitewide Annual Treatability Study	14 Mar 94
Draft IA IM/IRA Decision Document	23 Mar 94

**Future Milestones
Through FY95**

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit Sitewide Annual Treatability Study	14 Mar 95		14 Mar 95
Submit Draft IA IM/IRA Responsiveness Summary	02 Aug 94		02 Aug 94
Submit Draft Final IA IM/IRA Responsiveness Summary	23 Aug 94		23 Aug 94
Submit Final IA IM/IRA Decision Document	23 Aug 94		23 Aug 94

July Work Activity Status Sitewide Activities**Sitewide Treatability Studies**

Ion Exchange Process - All column tests have been completed through use of resins described in the original Work Plan as well as the three resins recommended by the subcontractor. Batch tests were started on each of the resins that were successful in removing uranium and selenium during the column tests. Batch test work was completed July 8, 1994. Samples were forwarded for analytical analysis in July 1994.

Potassium Ferrate Process (TRU/Clear) - A meeting was held with the DOE and EG&G on June 30, 1994, to review the use of experimental design software for the Potassium Ferrate project. It was agreed that the use of software will produce a superior experimental design and allow for results that will have a statistical basis. The Work Plan modification, which reflects the revised experimental design, was concluded on July 8, 1994. Testing started on July 15, 1994.

Other Sitewide Operations

Industrial Area Interim Measure/Interim Remedial Action Plan - The preparation and immediate review by the DOE and EG&G of the IA IM/IRA Decision Document was performed to meet the accelerated schedule requirements.

A four-month milestone extension request was submitted to the regulatory agencies, and a three-month extension was approved. A new schedule which has been developed will allow the new milestones to be achieved. A contract modification is under development that will enable the subcontractor to continue work on the project.

Community Relations - An information packet and video are being developed for the Accelerated Environmental Cleanup activities.

Surface Water Management - Onsite Water Control Task 100 (Drainage Repairs & Improvements) - The flushing of the South Interceptor Ditch has begun. The location of the flushed sediments has been resolved and will be placed west of Pond C-2. There are three main culverts to be flushed in the South Interceptor Ditch.

Task 300 (Pond C-2 Discharge Minimization) - Data are being prepared that use the assumption that the recycling of Pond C-2 water was fully in place since 1990, and the data will determine the number of required discharges from Pond C-2 from 1990 to the present. This information will support evaluation of this project's future.

Task 400 (Dam Upgrades) - After completion of an updated migration bird survey, geotechnical evaluation field work was completed on Dam C-2 and started on Dam B-5.

Task 500 (Program Management) - Work was initiated on the Technology Assessment for the Radionuclide Removal Report this week.

Decontamination and Decommissioning - The National Environmental Policy Act Categorical Exclusion was prepared for all Pilot Projects.

Pilot Project #2 (Security Incinerator) - Revision Three of the Field Sampling Plan was received. The revision added information on sampling requirements for paint

chips, analysis for silver as a toxic metal, and the addition of a section on Health and Safety.

A Readiness Review Round Table was held on July 15, 1994.

The Health and Safety Plan received final approval on July 12, 1994.

Pilot Project #4 (Above Ground Storage Tanks and the Hydrogen Hydroxide Tank) - The Area Health and Safety group took samples of the Hydrogen Hydroxide tank and had the samples analyzed for asbestos. The results indicated that there were nondetectable levels of asbestos in the jacketing. Comments on the Health and Safety Plan were forwarded to EG&G.

A Soil Disturbance Permit is being prepared to allow sampling around the Condense Holding Tanks.

Pilot Project #5 (Building 889) - The project was presented to the Site Utilization Board and accepted on July 12, 1994.

The Radiological Sampling Plan was completed on July 19, 1994.

Pilot Project #6 (Rooms 415 and 416, Building 777) - Work was initiated on the Field Sampling Plan, the Waste Management Plan, and the Decontamination Plan.

Planned Work for August

- Continue normal Surface Water Management activities.
- Continue normal Community Relations activities.
- Continue normal Decontamination and Decommissioning activities.

Problem

None

Open Items

None

SECTION 3.0 ROUTINE ENVIRONMENTAL MONITORING

The following generalized sampling schedule for Routine Environmental Monitoring is provided as requested in Section 210 of the IAG. Detailed quarterly monitoring schedules are prepared in advance and are available to the EPA and the CDPHE upon request from the Environmental Management Department and EG&G Rocky Flats, Inc. The schedules are lengthy; therefore, they are not reproduced here. An EPA or State-authorized representative may make arrangements to observe field work and to obtain split or duplicate samples.

3.1 SURFACE WATER AND SEDIMENTS

Each of the Surface Water Stations (approximately 20 stations) is sampled quarterly.

Each of the Sediment Stations (approximately 10 stations) is sampled quarterly.

Each surface water and sediment sample is analyzed for the following parameters:

- Contract Laboratory Program Target Compound List Volatile Organic Analysis
- Metals Contract Laboratory Program Target Analysis List and Non-Target Analysis List
- Field Parameters
- Specific Conductivity
- Dissolved Oxygen
- Major Anions
- Radionuclides
- Temperature
- Total Dissolved Solids/Total Suspended Solids
- pH
- Nutrients

Additionally, sediment samples are analyzed for Contract Laboratory Program-Semi Volatile Organic Analysis and Contract Laboratory Program-Pesticides/polychlorinated biphenyls Herbicides-619.

3.2 SOILS

Each of the soil stations (located at 1- and 2-mile radii from the plant center) is sampled annually.

Each soil sample is analyzed for plutonium and americium.

3.3 GROUNDWATER

A total of 355 groundwater stations was sampled in the second quarter of 1994. This

includes RCRA, CERCLA, plant protection, and boundary wells. Approximately 517 water level measurements were monitored quarterly for water levels, and approximately one-third of the wells is monitored monthly for water levels. Each groundwater sample is analyzed for the following parameters:

Radiochemical Parameters

Gross Alpha
Gross Beta
Plutonium
Americium
Strontium
Tritium
Uranium
Cesium

Inorganic Parameters

Nitrate/Nitrite
Total Phosphorous
Ortho-Phosphate
Ammonia
Total Dissolved Solids
Chlorine
Fluorine
Sulfate
Carbonate
Bicarbonate
Total Suspended Solids
Dissolved Contract Laboratory Program and additional metals
Cyanide
Contract Laboratory Program Volatile Organic Constituents

Field Parameters

Specific Conductivity
Temperature
Turbidity
pH

SECTION 4. SUBCONTRACTOR IDENTIFICATION

Subcontractors being used on the Rocky Flats ER Program and the work they are performing are identified on the following list as required by Paragraph 13 of the IAG.

OU	Project	Subcontractor	Subcontractor	Work Description	Start Date
1	Assessment	Dames & Moore		CMS/FS Report	Jan 92
1	Assessment	Dames & Moore		Public Health Evaluation	Apr 93
1	Assessment	Roy F. Weston		Revise RI Report, respond to agency comments	Feb 93
1	Assessment	S. M. Stoller		Environmental Evaluation	Apr 93
1	Remediation	Resource Tech.		B-891 Treatment System Operations Group, Inc. (RTG)	
2	Assessment	Woodward-Clyde		OU 2 RFI/RI Work Plan (alluvial and bedrock) and RI field work (drilling, well completion/development)	Sep 90
2	Assessment	Woodward-Clyde	Layne	OU 2 RFI/RI Work Plan (bedrock), surficial soils	Mar 93
2	Remediation	RTG		Installation and operation of the water treatment system for South Walnut Creek Phase of OU 2 IRA	Jan 91
2	Soil Vapor Extraction	Woodward-Clyde		Operation of Soil Vapor Extraction	1993
3	Assessment	IT Corporation	CH2M Hill	OU 3 Field Work and RI Report	Apr 92
3	Assessment	MRI		Wind Tunnel/Soil Resuspension Study	Aug 92
4	Remediation	HNUS	Halliburton Spec	Demobilize	Sep 91
4	Assessment	Parsons/Eng Science	Rust IE E	Implement the Phase I RFI/RI Work Plan, includes drilling, sampling radiation surveys, etc.	Aug 92
4	Remediation	Parsons/ Eng Science		Development of IM/IRA Decision Document and conceptual design	
4	Remediation	ERM-Rocky Mountain	Geraghty & Miller	Post-closure monitoring plan	Nov 93

<u>OU</u>	<u>Project</u>	<u>Subcontractor</u>	<u>Sub-Subcontractor</u>	<u>Work Description</u>	<u>Start Date</u>
5	Assessment	ASI Blackhawk Geo Walsh & Assoc. Layne Envir. Service S. M. Stoller Adv. Terra Testing	Dames & Moore Utility Mgmt. Service	Implementation of OU 5 Work Plan (excluding EE)	Jun 92
5	Assessment	S. M. Stoller		Implementation of Environmental Evaluation section of OU 5 Work Plan	Sep 92
6	Assessment	Woodward-Clyde	Lane, Ogden, Geo Envir	OU 6 RFI/RI Work Plan and Quality Assurance Addendum	Aug 92
6	Assessment	S. M. Stoller		Implementation of EE section of OU 6 Work Plan	Sep 92
7	Assessment	S. M. Stoller	Walsh & Assoc.	OU 7 revised Work Plan development and implementation. IM/IRA Decision Document development.	Nov 92
8	Assessment	Jacobs Eng.	Walsh & Assoc.	Implement the Phase I RFI/RI Work Plan for nonintrusive field work for the IA OUs	Aug 93
9	Assessment	Jacobs Eng.	Walsh & Assoc.	Implement the Phase I RFI/RI Work Plan for nonintrusive field work for the IA OUs	Aug 93
10	Assessment	Jacobs Eng.	Walsh & Assoc.	Implement the Phase I RFI/RI Work Plan for nonintrusive field work for the IA OUs	Aug 93
11	Assessment	S. M. Stoller		Implement the RFI field work and report writing	Jan 94
12	Assessment	Jacobs Eng.	Walsh & Assoc.	Implement the Phase I RFI/RI Work Plan for nonintrusive field work for the IA OUs	Aug 93
13	Assessment	Jacobs Eng.	Walsh & Assoc.	Implement the Phase I RFI/RI Work Plan for nonintrusive field work for the IA OUs	Aug 93
14	Assessment	Jacobs Eng.	Walsh & Assoc.	Implement the Phase I RFI/RI Work Plan for nonintrusive field work for the IA OUs	Aug 93
15	Assessment	ERM-Rocky Mtn.	G.S. Miller, Inc.	Implementation of the RFI/RI Work Plan	Mar 93
SW	HRR	IT Corporation	Doty & Assoc.	Prepare HRR	Feb 91

Subcontractor Identification

<u>OU</u>	<u>Project</u>	<u>Subcontractor</u>	<u>Sub-Subcontractor</u>	<u>Work Description</u>	<u>Start Date</u>
SW	Adm. Record	QuantaLex		Maintain IAG Administrative Record	Oct 90
SW	Geo. Char.	Jacobs Eng.		Well Abandonment and Replacement	Mar 93
SW	Geo. Char. University	Colorado State		Support master's thesis of Structural Geology, of Front Range Area Near Rocky Flats	Nov 91
SW	Geo. Char.	S. M. Stoller		Prepare 1992 Annual RCRA Report and Addendum	Jan 93
SW	Geo. Char.	Colorado School of Mines		Masters-level training program in Engineering Science and Engineering	Aug 92
SW	Geo. Char.	Woodward-Clyde		Support for the Soil Water Monitoring System	Feb 93
SW	Geo. Char.	Colorado State University		Sequential Extraction	April 92
SW	Geo. Char.	University of Colorado		Soil Monitoring Vadose Zone	Jun 92
SW	Geo. Char.	S. M. Stoller		Spatial Analysis/Computer Support	Mar 93
SW	Geo. Char.	Woodward Clyde	SAIC/Wright Water		Jan 93
SW	Monitoring	IT Corporation		Analytical Services for groundwater, surface water, and sediment	Jul 90
<u>SW</u>	<u>QA</u>	SAIC		Develop and implement QA program and field operations oversight	Dec 90
PM	Support	S. M. Stoller		Program Management Support	Oct 92
PM	QA Support	SAIC		Provide QA/QC support to ER Program	Nov 92

ACRONYMS

CDPHE	Colorado Department of Public Health and Environment
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CMS	Corrective Measures Study
DOE	U. S. Department of Energy
EPA	U. S. Environmental Protection Agency
EQS	Environmental Quality Support
ER	Environmental Restoration
FY	Fiscal Year
IA	Industrial Area
IAG	Interagency Agreement
IHSS	Individual Hazardous Substance Site
IM	Interim Measure
IRA	Interim Remedial Action
IRAP	Interim Remedial Action Plan
OU	Operable Unit
RFFO	Rocky Flats Field Office
RFI	Remedial Facilities Investigation
RI	Remedial Investigation
TM	Technical Memorandum